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TIMES PAST — THE TIMES

HIGHER EDUCATION SUPPLEMENT

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A clearing in the jungle

For too many people in higher education school examinations are a closed book. If they do dare to open it they are faced with a bewildering collection of sets of initials – GCE, CSE, CEE, AS levels. There seem to have been so many proposals to reform examinations that only careful observers can even remember which ones came off. In many ways higher education shares this endemic confusion with parents, the other key group with an interest in the future shape of school examinations.

So in the simplest sense Sir Keith Joseph's decision to amalgamate the Ordinary level of the General Certificate of Education with the Certificate of Secondary Education to form a common 16-plus examination is welcome. It opens up a small clearing in the jungle. In time and with luck it may lead to a much simpler and more comprehensible system of school examinations. This would not only open up opportunities to those who are at present defeated by the jungle but also help those who are responsible for admitting students to higher education to get a clearer and fairer picture of the future talent which they are trying to identify. So the merger of O levels and CSE is a small but hopeful beginning.

Sir Keith's immediate decision is of interest to higher education for two main reasons. First, in a practical sense, universities and polytechnics use O level performance in conjunction with school reports as a guide to making provisional offers to candidates which are than confirmed or contradicated by their A level grades. Second, in a much broader sense, O levels may be regarded by some as the start of a seamless web of academic specialization on which allegedly the high quality and/or the short length of our degree courses depend.

The merger of O levels and CSE is unlikely to cause much concern on the first count. If anything the new common examination will provide more detailed information than the present O level. Indeed there is a danger that its more finely graded results may be so convenient to those in the business of making conditional offers that they come to overshadow school reports which are often much more accurate, and are certainly more up-to-date, predictions of success at A level and beyond. As for the general character of the new examination it is clear that Sir Keith has only approved the merger on condition that the O level dog wags the CSE tail, if there is any wagging to be done.

Some may feel a small flutter of concern about the Secretary of State's enthusiasm for criteria-referenced (ie what you've learnt) as opposed to norm-referenced (how you've done compared with everyone else) examinations. This enthusiasm which was first expressed as an aspiration by Sir Keith in his speech to the North of England conference in Sheffield at the start of the year is likely to be reflected in the gradings of the new examination. The problem for higher education is that it may need norm-referenced examinations because entry is so competitive and because its interest is in future potential rather than past achievement, in contrast to the employers of school leavers who clearly need to know what their new recruits have actually learnt. But no conceivable system could do away with this tension between using an examination as a sieve through which it is necessary to pass to the next stage of education and regarding it as a terminal qualification.

On the second count the merger may cause more anxiety. To some its is a simple question of crumbling standards. First the grammar schools were overrun; now the outer bailey of the O level has been breached; soon the inner bailey of the A level will be stormed; and then the keep of the honours degree itself will come under direct siege. But this is very much a minority opinion, a hangover from the "Black Paper" years. The more sensible know that the Scottish universities have for many years achieved as high, and arguably higher, academic standards without the benefit of these formidable defensive fortifications in secondary schools.

However, any sign that a relaxation of specialization in school sixth forms may lead to less well-prepared first-year students (less well-informed, really) always sends shivers through science departments. The inexorable accumulation of knowledge makes it difficult enough to hold the line on a respectable three-year honours degree without the difficulty apparently being made greater by students starting from a lower base line. But although a serious concern it is probably exaggerated. Several disciplines, like classics and some modern languages, have seen their traditional foundations in sixth forms crumble. Often the effect has been to reinvigorate these disciplines by upsetting their complacency and conservatism. Other disciplines are so new that they have never enjoyed any substantial underpinning of knowledge in the schools. This has not held them back.

Of course the universities in particular have become very sensitive about the A level grades of their students. This new sensitivity is one of the most baleful consequences of the discriminatory distribution of the reduced grant in 1981 by the University Grants Committee. All too clearly universities were judged by the A level grades of their students. But this sensitivity may be a transitory phenomenon. A more liberal approach to entry standards and qualifications will be an inevitable consequence of the demographic contruction after 1990. By then the development of continuing education and part-time courses and perhaps the introduction of new patterns of undergraduate courses (more four-year courses to keep the scientists happy, more two-year courses in humanities and social studies to broaden access and keep up numbers?) will have created a new environment.

Nearly every university has expressed support in principle for a broader sixth-form education in their replies to the UGC letter – despite the shock of 1981. Admittedly many have added qualifications that tend to undermine their general support. Nevertheless it is encouraging that there is so little evidence of an academic backlash in higher education which would reinforce the already excessive specialization in schools. On the contrary there seems to be quite support for cautious liberalization. The merger of O levels and CSE is clearly an early stage in a process of cautious liberalization. As such it can pose no threat to the practices and standards of higher education.

Free good or commodity?

Sometimes new technologies slip into our lives so neatly they are taken for granted before anyone really notices. If a colleague has booked a video needed for another class, a duplicate can easily be made. A vital article for a seminar can be distributed around the group after a few minutes at the photocopier.

Academics have grown accustomed to these conveniences. But the law moves more slowly than higher education institutions. When it catches up, it will sharpen the terms for managing information. While researchers and teachers have sometimes almost come to treat information, their main resource, as a free good, new legislation will reinforce control of information as a commodity. What was once fair dealing may soon be piracy.

The general response to this prospect so far has been boredom. Much easier to ignore the notices above the copying machine and carry on than to think about regulating old habits. But academics who take this attitude may be in for a rude shock. This is not because the publishers are likely to succeed in their call for licence fees for single copies, but because the terms of the whole debate are shifting. The shifts, largely unremarked, are important for higher education in two ways.

First, there is a stronger feeling growing up in government that information is a commodity, and that part of education's job is to instil a sense of its value. This means that some practices already legally dubious will come under much closer scrutiny. Take videos, for example, where pirate copying is rife throughout higher education. It does not *feel* like a crime. The polytechnic or university probably owns the tape and the recorder, and the extra copy made is for education of others rather than personal gain. But the investigators employed by video companies will not see it like that.

At the same time, colleges' own interests as publishers are expanding, and look like becoming a more important source of revenue. This applies to new media as much as to traditional university presses. Again, video is one focus; the extension training scheme just launched by Aston University is planned to turn over £200,000 worth of video teaching business in three years' time. And at £3,500 to £4,000 per student for a complete master's course, the temptation to copy may grow with the business.

Put the two trends together, and how long will it be before we see one higher education institution suing another for illicit copying? If it comes to that, it will harm the interests of higher education because it will encourage other customers to disregard authors' rights. If universities and polytechnics want others to respect patents on inventions, pay a fair price for publications and, to raise a still more contentious area, refrain from copying computer software, they must behave accordingly.

For now, the costs loom larger than the benefits, and the University Grants Committee, local authorities and research councils will have to take account of the cost of information in teaching and research. Thrashing out precise terms for a new pattern of payments and exchanges will not be easy, especially as the technology is changing year by year. But it is time for a wider consideration of these issues in higher education, before new copyright legislation is written which creates problems for academics in all their roles, as teachers, researchers, authors or publishers.

The too-Privy Council

The Privy Council is an archaism in terms of its impact on universities (and much else, no doubt) – and it is an archaism increasingly embroiled in political controversy which is a dangerous combination (page 11). Its role in higher education could be benignly tolerated so long as this was confined to the purely formal. But today the Privy Council, as the Visitor to many universities is asked to judge appeals by students, particularly against the rejection of their PhDs, when it has no competence to do so. And as the grantor and reviser of charters it has been drawn into the explicitly political arena, first with the award of a charter to the University of Buckingham and most recently in the row over tenure.

So an indefensible situation has been created. The archaism of the Privy Council has come to obfuscate the true responsibility for important policy decisions. Its powers should be redistributed – to the courts in the case of student appeals if universities fail to operate their own fair and open appeal procedures, and to the Department of Education and Science (if we want to be honestly political) or the University Grants Committee (if we want to pretend to be apolitical) on questions that affect university charters.

Laurie Taylor

Now – script number 0027163.

What's that again?

I'm sorry, Professor Dewlap. Script number 0-0-2-7-1-6-3.

Ah yes.

I don't think there's too much of a problem here. Looking across the marks it seems a pretty straightforward lower second. Very consistent set of two-two marks. Yes, on the face of it I'd say a middling sort of lower with a great deal of upper support. Any other comments before we move on.

Yes, Professor Dewlap?

Well, I can see what you mean, Doctor Wernitz, about the general low second quality of the *particular* marks but I wonder if I'm alone in detecting a slight upperish scent within the *grand* array.

I'm sorry, Professor Dewlap, did you say an upperish "scent"?

Perhaps "scent" is a little strong. Let's say there's at least a hint of something a shade more lively bubbling underneath the rather bland exterior.

What – a sort of *upperish* liveliness?

I'm not certain that I'd want to commit myself completely, but certainly a definite *imitation* of something a little more than a standard lower.

But nevertheless you'd admit to the *overarching* blandness?

Yes indeed. No doubt about that. But how might one put it – seems rather an interesting *sort* of blandness – a blandness, perhaps, which has just that slight lack of balance which carries a suggestion of forthcoming maturity.

Mmmmm. I'm not certain I'd want to go *all* the way with you on that, Professor Dewlap. Indeed, I sense in one or two of the marks a certain thirdish quality – a rather immature, thin, yes, even *stalky*, character.

***Oh no, surely not.* I mean, I can accept that the three 54 marks are less robust than one might wish, but there's a definite sturdy, almost yeoman, quality to those two 55 marks. And alongside those, that nice rounded 57 which contains just the hint of finesse which I believe raises a suspicion of upperishness.**

I'm afraid that's going *much* too far. I mean, look at the range – 51 to 57. Essentially loose-knit.

***Not at all.* Consider those two 56. Inaccessible, I grant you. A certain closed-in quality. Possibly. But, nevertheless, absolutely no lack of body.**

Well, Professor Dewlap, I'm afraid that we must disagree. Perhaps our external examiner has an opinion which might help resolve this matter.

Thank you, Doctor Wernitz. Most interesting comments all round. But I really do feel that we are all getting far too carried away by mere impressions. This is candidate 0027163 is it not?

Yes indeed, sir.

Then I think the matter is easily resolved. Certainly when I received these scripts I rather agreed with Professor Dewlap about their possible upperish quality. But when I came to reexamine them in my hotel room last night I found them to be of a thoroughly lowerish character.

You mean?

Exactly. There can be no doubt that a lower is the proper mark. However initially attractive, this candidate clearly does not travel well.

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Joint bid to end tenure deadlock

by Ngaio Crequer and Paul Flather

A group of universities led by Bradford is to propose three-way talks between the vice chancellors, the Association of University Teachers and the Department of Education and Science in an attempt to bread the deadlock over tenure.

The plan will be put forward by Professor John West, Bradford's vice chancellor, in a letter to be discussed at today's main meeting of the Committee of Vice Chancellors and Principals.

He said that as salaries were negotiated nationally so should the future of tenure. Some university teachers should have tenure but it should be a prized possession to be fought for. The Government had to start thinking seriously about the compensation that would be paid to university teachers who faced future redundancy without the protection of tenure.

Bradford's plan comes on the eve of the vice chancellors' crucial debate about their response to Sir Keith Joseph's plan to end tenure for new recruits to university teaching. The committee is urgently exploring the scope for compromise, in full knowledge that few universities are likely to agree to amend their statutes voluntarily.

Sir Keith, the Secretary of State for Education, has warned that unless all universities agree to amend their statutes to allow new lecturers to be dismissed on grounds of redundancy or financial exigency, he will introduce legislation to appoint commissioners with the power to amend their charters and statutes to that effect.

Each vice chancellor has been asked to say at today's main meeting of the Committee of Vice Chancellors and Principals whether their university would introduce such a clause. But most universities will say that they either cannot or will not comply with the Government's wishes. Some senates, such as at Liverpool, have said this expressly. In others, this is the vice chancellor's personal assessment.

A large number of vice chancellors, while not supporting the idea of statutory commissioners, would not oppose them if this meant they could influence who was chosen and what powers they had. They would prefer this to legislation that would remain on the statutes.

Universities which believe they do not have tenure, will argue that the legislation is irrelevant and nothing to do with them. Reading, which recently introduced a financial exigency clause, also believes they will be exempt.

Edinburgh University has said it does not wish to contemplate changes in tenure. Manchester senate has not yet met but is likely to say it cannot or will not change. Salford's reply is non-commital.

The University of Wales Institute of Science and Technology council has said that statutory commissioners are the only way to proceed.

Meanwhile an Oxford University consultative paper published this week attaches little weight to the arguments that academic freedom would be put in jeopardy without secure long-term tenure.

The paper, from the university's council and general board, describes tenure as a "very desirable benefit" attached to academic employment allowing universities to attract first-class staff at salaries which normally would not be regarded as competitive.

The paper stresses that it would be very regrettable if Sir Keith did try to intervene to resolve the issue of tenure and states that arrangements agreed within the universities own legislative system are "more likely to be satisfactory to the university" and "more likely to include proper safeguards".

But it points out that even if Sir Keith does decided to appoint statutory commissioners in the end, the university would still be better equipped for a "dialogue" if it has done the groundwork internally. All individuals, departments and colleges have been asked for comments by December 10.

US physicists attack Reagan 'star wars' defence plan

from Peter David

WASHINGTON

The academic physics community in the United States has become embroiled in an increasingly bitter quarrel with the Pentagon over the feasibility of President Reagan's plan to build a "star wars" defence against nuclear attack.

Although virtually all the research for the project is being conducted in government laboratories, university physicists are beginning to spearhead public opposition to the scheme.

In March, a committee of prominent university physicists published a detailed technical report, arguing that even the most ingenious defensive system would be overwhelmed in a nuclear war and that deployment of such a system would exacerbate superpower tensions.

Members of the committee included the Nobel laureate Hans Bethe, the Cornell scientists Carl Sagan and Kurt Gottfried, and the Massachussetts Institute of Technology physicist Victor Weisskopf.

But the most bitter clash came over a recent technical memorandum prepared for Congress by its own scientific think tan, the Office of Technology Assessment. In it, Dr Ashton Carter, an MIT physicist and former Pentagon expert on on missile defences, said the chances of achieving a near-perfect defence was so remote it should not form the basis of public policy.

The report, released just as Congress was considering a Pentugon budget request for $2,000m for research on star wars, has come under such fierce attack from the defence department and its allies that some academic fear the start of a witch hunt.

The Pentagon had also tried to discredit Dr Carter's scientific expertise. Lieutenant-General James Abrahamson, head of the star wars initiative, told Congress that the report contained "technical errors, unsubstantiated assumptions and conclusions that are inconsistent with the body of the report.

At the end of last month, the campaign against the report reached a climax when deputy defense secretary Howard Taft, claiming that five independent review groups had criticized Dr Carter's conclusions, called on the OTA to withdraw it from circulation.

But the debate took a surprising turn this week, when Air Force Major-General John Toomay, a prominent member of the panel which advised President Reagan to proceed with star wars in the first place, publicly defended Dr Carter.

While England were succumbing at Lord's, a new batting star was having an equally torrid time at the Civil Service cricket ground a few miles away. Mr Peter Brooke, better known as under-secretary for higher education, failed to arrest a collapse in the middle order as the Department of Education and Science were dismissed for 77 by a team fielded by Dr Ray Rickett, director of Middlesex Polytechnic. Mr Brooke was bowled for four by Mr Brian Goodfellow, the polytechnic's chief technician in craft, design and technology, after more than half an hour at the crease. The DES team lost by seven wickets.

External checks approved 'Marxist' OU course

by Maggie Richards

Senior academics from five universities were responsible for thorough scaling of an Open University social science course now under attack from the Department of Education and Science for Marxist bias.

As part of normal procedures, external assessors from Leeds, London, Oxford, Cambridge and Glasgow examined the content of the course initially, and have continued to monitor its up-dating — making it one of the most rigorously inspected courses ever presented, the OU maintained this week.

The university's vice chancellor, Dr John Horlock, has written to the DES answering charges of Marxist bias put forward in a report commissioned by Mr David Hancock, permanent secretary at the DES.

The report claims the course — D102 — is deficient in its coverage of economics and unbalanced in its treatment of many of the topics it does cover.

The review was carried out by Whitehall economists after a series of complaints about Marxist bias in the economics block of the course.

The unnamed economists conclude that "the unaware student is likely to emerge from the course with a partial and inadequate picture of how the British economy works, too little appreciation of the way that resources are allocated, a bias towards Marxist perceptions of the primary importance of class conflict and inequality, and little conception of the extent of his own ignorance".

Among the most important omissions are demand theory, which the economists argue is rooted essentially in an approach to value via individual preference, the factor markets, and the modern theory of imperfect or monopolistic competition.

They add: "Profit is seen purely in terms of the expropriation of a surplus created by labour; no mention is made of its possible role as a reward for risk-taking or for the stress and burdens of entrepreneurship".

The review says that the block propagates the essentially Marxist view that in a capitalist society social relations can be summarized into the conflict of capital versus labour. It fails to give proper weight to the rise of the middle classes, and of managers, the changing ownership of capital, and the greatly increased role of the state.

In a letter to the vice chancellor, Mr Hancock points to the OU's students as inexperienced and lacking access to

continued on page 3

Door could be opened for under-21s

The Open University is poised to admit its first post-school entrants, but it expects them to remain very much a minority of its total student population.

The decision, which the OU has hesitated about for many years, was taken at a meeting of its senate last week. It now goes to the university council for final ratification.

Admission of 18 to 21-year-olds was first suggested by Mrs. Margaret Thatcher, as Secretary of State for Education and Science, in 1970. Concern about the reaction of the conventional universities and the age of adulthood then being set at 21 led the OU to defer the matter.

But in the mid-1970s, a pilot project with the younger age group was conducted and it found that the OU was not enticing students away from more traditional forms of higher education.

Instead it was attracting a new clientele — mainly in the 19-21 age bracket — who had left school at 16 and now wanted to return to education, but because of jobs or family commitments could not follow full-time courses.

Post-school applicants will not be accepted by the OU until 1986 and they will be warned that commitment to at least 15 hours' study a week will be necessary.

The OU expects the 18-21-year-old group to amount to only a few hundred students each year.

Non-teaching staff face speedy deal

by David Jobbins

Vice chancellors are today reviewing progress in the current pay round, while a settlement with a second group of university workers is in sight.

The way seems clear for speedy deals with non-teaching staff at around 4.8 per cent on pay scales with other improvements in conditions thrown in, but rapid progress on academic salaries looks less likely.

The Association of University Teachers pulled out of a meeting of the first stage of its negotiating machinery, Committee A, scheduled for this week and no new date has been fixed for negotiations to resume.

But negotiators representing 1,400 technicians are recommending acceptance of a 4.8 per cent offer hot on the heels of a similar one to clerical staff.

Branches of the clerical union, the National and Local Government Officers' Association, are said to be accepting the offer, and it is expected that technicians who belong to the Association of Scientific, Technical and Managerial Staffs, will follow suit. They only narrowly rejected an earlier offer of 4.5 per cent.

Leaders of 1,400 manual workers also meet the employers today.

Cancellation of the academics' meeting fuelled speculation that the vice chancellors might not be prepared to match the offers being made to non-teaching staff. If both the technicians and clerical staff settle for the package offered, the impact on the universities' finances will not be severe. The two groups make up less than a quarter of the 70 per cent of universities' total spending which goes on salaries. Non-clinical academics, whose salary bill is equivalent to 50 per cent of universities' total spending, also have higher salaries.

AUT general secretary Ms Diana Warwick said: "The employers have made offers to other groups within the sector and we feel the employers should be prepared to negotiate sensibly. It is clear at this stage they are not prepared to enter into the kind of negotiations we feel would produce a reasonable settlement."

The immediate threat of disruption to the preparation of the college lecturers' submission for arbitration receded this week when the main union, the National Association of Teachers in Further and Higher Education, conceded that its arch-rival the non-TUC Association of Polytechnic Teachers, should sit in on a meeting of the teachers' unions to discuss arbitration.

letters to the editor

A question of changing prison attitudes

Sir, – I have recently seen the brief article which refers to the Parliamentary Committee's report on education in prisons and the Government's limited response to its recommendations. Having served a prison sentence between July 1982 and July 1983 perhaps I might offer an, albeit subjective, observation on what seems the major change necessary, that of altering the attitudes of the informed and administrative staff towards the education departments.

While I can write only from knowledge of conditions in Wandsworth and Ford Prisons it would seem that the general attitude of prison officers and administrators is that educational opportunities present a "soft option" for inmates and that access should be blocked to all but the most persistent applicants, with the result that those most in need of help in the area, for example, of reading and basic literacy tend to be denied access, since appeals to higher authority must be submitted in the form of written petitions, help with which will not be forthcoming from the authorities.

In my own case I encountered a number of obstructive attitudes which were overcome only by appeal to the Home Office. When I entered Wandsworth I was nearing the end of my fourth year of study with the Open University and was expecting to obtain my pass degree following the exams in October of 1982. I immediately encountered difficulties in obtaining my course material and textbooks both from the prison authorities and more surprisingly from the prison education officer who suggested that my involvement with the OU was merely a means to easing life in prison. It was only through the intervention of the Open University's London region senior counsellor who was able to contact the Home Office on my behalf that the books necessary to complete my studies were provided.

At Ford "Open" Prison, conditions were far more conducive to study and despite their own internal tensions the education department were exceptionally encouraging in the provision of facilities at all levels of study. None the less a continual battle was fought with the uniformed staff for educational privileges and despite the presence of a governor with liberal attitudes the hierarchical nature of the prison system of authority seemed to require constant referral to the Home Office. Perhaps the major failing of the system being that again those most in need of help were denied it through the attitudes of the ordinary prison officers. Thus the few opportunities for day parole study at local colleges were made available only to those like myself who were able to make a cogent written presentation to the Home Office.

It is clear to me that only a sustained effort by the Home Office, who often seem unaware of the realities of prison conditions, to educate and alter staff attitudes from the bottom upwards will result in educational opportunities in prison being made available to a wider cross-section of inmates, and in particular to those most in need. Education departments seem able to identify these people but seem unable to obtain from the administrative authorities either the facilities or the cooperation necessary to fulfil their responsibilities.

Yours sincerely,
EDWARD LEWIS,
240 East End Road, London.

Graduate employment

Sir, – In your report (*THES*, June 1) of the new careers guide *Graduates and Jobs* Mr Robert Porrer describes the guide as "too simplistic" because "subject is not of overriding importance in finding a job". The guide makes it clear that for an individual graduate personal factors will have an important influence on their career prospects. *But* it is impossible to ignore the very marked and persistent differences between subjects and institutions in their graduate employability that are revealed in the guide. These differences are clearly linked also to graduates' subsequent early employment and the extent to which they undertake further study or training.

Graduates and Jobs is based on the annual first destinations survey produced by graduate careers services and these patterns emerge consistently from those figures. It is the only available publication that presents and interprets the labour market implications of this survey.

Your report also draws a false comparison between the information in the guide and the current state of the graduate labour market. Prospects for graduates are improving in line with the general upturn in the economy. It is quite consistent thus the trend in the relative advantage of having a degree should still decrease. And incidentally your report from the Association of Graduate Careers Advisory Service that demand is up in mechanical and electrical engineering, computer-related work and commerce could have been lifted straight from *Graduates and Jobs*. It also sits oddly with the claim that subject is not important.

Yours sincerely,
JASON TARSH,
Employment Market Research Unit,
Department of Employment.

Scots unity

Sir, – We all know that correspondents do not write their own headlines. One can forgive Olga Wojtas for the misleading front page of your issue of June 22. The headline refers to the principals as "breakaway Scots". But the report of Ms Wojtas makes clear that the Scottish courts were trying to find ways of cementing the British connexion. Our part in a united British university system is weakened if the UGC is poorly informed of differences across the border. If the UGC says "no" to our solution, it is to be hoped that it will work harder to achieve what was then intended. We, with our own standing committee, will want to help them, as we will want to clear the confusion surrounding the Scottish Tertiary Education Advisory Council.

Yours sincerely,
STEVEN WATSON,
Principal and vice chancellor,
University of St Andrews.

Sorry tale

Sir, – Having become accustomed to the unpredictable schedule for the delivery of *The THES* resulting from its trans-oceanic shipment, I was unsurprised to find the May 25 issue and the June 1 issue arriving simultaneously.

However, nearing the end of the June 1 issue, I met with a horrible shock; your announcement that the column by Laurie Taylor that I had enjoyed mere moments previously was to be his last, in contrast to your prediction, I do (selfishly) begrudge his early retirement. As a reader of *The THES* for less than one year, I have not been able to read each of Professor Taylor's nearly 300 columns. Thus, I look forward to the remainder of the ten best. (Although, I imagine the task of selecting these ten is not easy; might I suggest a slim volume of collected works?)

As a post-1978 reader of *The THES*, I cannot imagine it without Laurie Taylor's column. I had assumed perpetuity. Change is difficult to accept and many of us will undoubtedly resent this intruder into Laurie Taylor's space. I hope the new columnist can rise to the challenge and I wish him/her the best of luck.

Sincerely,
IRVING FREEMAN,
2601 South Fifth Street,
Temple, Texas, USA.

Tenure debate

Sir, – In the issue of June 1 the chairman of the University Grants Committee was quoted, in a speech to the Higher Education Foundation, as expressing the opinion that academic tenure was no longer of as great importance as it had been in earlier times. He is also reported as saying that the London School of Economics managed to get along satisfactorily without tenure, and also that tenure did not operate in American universities, without causing apparent harm.

Dr Dahrendorf, in the following number of *The THES* corrected the reported statement, saying that tenure did indeed exist in the LSE.

Tenure also holds in most American universities, contrary to the reported assertion, but the method of awarding tenure varies between institutions. It is often a matter of election by peers, but most full professors gain tenure.

It is to be hoped that the quality of advice given by the UGC to the Secretary of State is better than is evidenced above, but having observed the workings of the UGC over the past three or four years, I/we hope is not particularly great.

I am, Sir,
J. F. ALLEN,
Professor emeritus,
Department of physics,
University of St Andrews.

Dr Dahrendorf: "tenure does exist"

CNAA validation

Sir, – It is not really helpful that the Lindop inquiry into validation should be categorized by your editorial (*THES*, June 22) under the heading "The CNAA on trial".

Validation is a complex process involving many strands. It is not limited to the Council for National Academic Awards. There is validation by the Business and Technician Education Council and validation and accreditation by professional institutions. There is also validation by universities of courses which they themselves do not actually run. There is the internal validation of courses by institutions.

If the outcome of the validation inquiry is that some mature institutions which may have been teaching degree students long before some of the newer universities were created – shall be given greater responsibility for their own courses, then that can hardly be classified as a failure of the CNAA.

If any change – even those which the CNAA is actively pursuing with institutions – is to be categorized as a defeat for the CNAA then the debate will be carried on at a low level.

Whatever the outcome of the inquiry, the CNAA cannot be classified as a failure. There are some 100 institutions in the UK, including the 31 polytechnics, which will stand as testimonial.

Your faithfully,
H. MASON,
Secretary, education policy committee,
Association of Polytechnic Teachers.

Union business

Sir, – John Lines and David Shelton try to put a stout defence of the Business Education Teachers Association as an organization reflecting the interests of all groups in the content of business education (*THES*, June 8). But to say that the specific interests of organized labour are represented because some participants in their discussions happen to belong to trade unions is clearly absurd.

My main concern is that vast educational resources are now devoted to the field of study called "business". "Business" curricula are said to be directed towards the needs of "industry and commerce". What that really means is that the students are taught "relevant" subjects better to equip most of them for their future roles as middle level functionaries serving the interests of their employers in the career context of a bureaucratic crawl.

Many teachers involved in "business" education have, in effect, been recruited to provide employers with this suitably equipped and ideologically processed personnel. These teachers have become the instrumental tools of the employing class with all that that implies regarding the muting of radical questions concerning the structure of power and control in industry.

Perhaps BETA is proud to be associated with such a partisan process. If not then BETA should activate an ongoing critical appraisal and concern as to whose interests are being excluded from "business" education.

Yours faithfully,
COLIN LOVE,
Arnold Lodge, Belvoir Road,
Battesford, Nottingham.

Unfair copies

Sir, – Mr Lewis's comment (*THES*, June 22) on my question on photocopying by students is true but not to the point. Of course photocopying can be useful. But we do not know how much is spent by students and it is strange that even the most detailed studies of student expenditure on books fail to take this into account; but one thing is certain, that the authors of articles and books photocopied get *nothing* out of photocopying. As an undergraduate said to me the other day when he paid for his copies, after asking if the authors got any of the money and being told they did not: "It doesn't seem fair." Precisely.

I have just received the British Library lending division's latest 1983/84 *Facts & Figures*: 537,000 overseas photocopy requests, 2,650,500 home requests; while the photocopy forms cost £97.50 + VAT per 50 (home), £53 per 20 (overseas); and there are 90 photocopiers in the BL lending department. Big money; of which the copyright owners get nothing.

The sooner that copyright law is changed so that this scandalous exploitation of authors' and other copy right holders' rights ceases the better.

Yours etc,
JOHN GILLARD WATSON,
Librarian, Institute of Economics and Statistics, Oxford.

Review request

Sir, – A review of Catherine Garvey's *Children's Talk* in the Psychology special number (*THES*, June 8) included the following paragraphs:

"My disquiet was aroused particularly in connexion with the activity of 'repair', where the danger of assigning disparate phenomena to the same superordinate category is readily apparent. Assimilated to the category of 'repair' are indications by an addressee that he has not understood all or part of an utterance, questions asking for further specification of a constituent appearing in the speaker's utterance, self-monitored corrections by a speaker, and the strategies speakers may adopt when they attempt to take the same turn in a conversation.

"The 'racking and guidance system' includes the manipulation of topic-comment structures, the establishment of reference, deixis, and a variety of cohesive devices including pronominal anaphora and ellipsis. As for the 'facilitation system', this is concerned with the differentiation of persons of different status, this differentiation having consequences for the formulation of apologies and the politeness of request forms. For each of these phenomena Garvey cites developmental data, sometimes in an anecdotal fashion and sometimes via quantitative measures, to illustrate the child's use of a particular device. However, where there are clear developmental trends, there is no attempt to offer a detailed model of the factors causally involved in the development."

The reviewer, Mr Martin Atkinson is a lecturer in the department of language and linguistics at the University of Essex. I wonder whether he or other of your readers could put these paragraphs into the English language for us and tell us what it means, if anything.

Yours sincerely,
J. PAUL,
School of Architecture and Landscape,
Thames Polytechnic, London.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

Call for tighter control

by Patricia Santinelli

Teacher training institutions face even tighter control of the secondary teacher training curriculum if the Secretary of State for Education accepts advice that subsidiary as well as main subjects should be approved by the new Council for the Accreditation of Teacher Education.

The recommendations which were prepared by the Advisory Committee for the Supply and Education of Teachers are to be put to Sir Keith Joseph later this month.

The committee has recommended that all intending secondary teachers should be prepared for no more than two subjects, their principal one, plus a substantial subsidiary subject for which study should be no less than a third of the main qualification, and that both should be assessed by CATE.

It has defined second subjects as including areas such as combined science or integrated humanities, but excluding studies such as "observation and enquiry" or "study skills".

All candidates admitted to "second method training" will have have to have at least an A level base or equivalent in that or a closely related subject, although exceptions will be made where no obvious qualification exists in a particular area such as music.

In addition the committee wants such subsidiary subjects to be recorded on teachers' qualified status letter, but stresses this should not restrict their freedom of employment.

The committee does not recommend, however that second method training should be strictly related to school needs as main subjects are. It says institutions should decide on provision after consulting Her Majesty's Inspectorate and their local authorities on what is appropriate in terms of resources and national needs.

ACSET says it recognizes that training institutions may be helped in making high quality second subject provision if they were resourced to offer the same subjects as main specialism for secondary teachers. It adds that a step in this direction may be taken when allocations are made for 1986 onwards.

Its recommendations may put to an end the confusion which resulted from conflicting advice to institutions by the Department of Education and Science in 1982 and 1983 on the status of second subjects.

Last year the DES withdrew a circular restraining institutions from second method training except in subjects which were on their main list. This infuriated some colleges which acting on previous advice had already switched resources and staff to other areas.

Pay facts

Sir, – Members of the salaries panel of the Association of Polytechnic Teachers display a startling ignorance of the facts of the pay negotiations by college and polytechnic teachers.

G. Wyvill and D. Johnston (*THES*, June 15) that the National Association of Teachers in Further and Higher Education rejected arbitration of this year's pay claim. Untrue. While Natfhe did not actively seek arbitration, and said so, we were open to consideration of the possibility. Readers will have seen in the press that we agreed to a management proposal of arbitration this year when it was clear that the terms of reference laid down by the Natfhe national executive committee were achieved in concert with the Association of Principals of Colleges, the National Society for Art Education, and the Association of Agricultural Education Staffs.

None the less, it remains true to say that we prefer collective bargaining as the normal route to settlement. Plainly there is ample evidence that recent settlements obtained this way have been as good as the best achieved by any means in the public sector, and this has applied to both college and polytechnic lecturers.

Second, it is well known that when there are structural demands in pay claims, as there have regularly been in our claims for FE and HE teachers, they are more likely to be progressed by negotiation. We do not expect the APT to respect our desire to see a fair career structure for FE teachers, but we are proud of the fact that we do. Moreover, there is overwhelming evidence that polytechnic lecturers recognize a fair case when it is put to them.

It is a conspicuous characteristic of groups such as the APT which lack trade union organization and experience, that their first instinct is to turn to third party solutions rather than to the argument and pressure that is part of successful bargaining.

Yours faithfully,
DAVID TRIESMAN,
Executive Member,
National Association of Teachers in Further and Higher Education.

Research units in cash bid

by Paul Flather

Research staff at the four specialist units supported by the Economic and Social Research Council at the universities of Aston, Cambridge, Oxford, and Warwick, are out to make a last ditch bid to secure the continued funding of their projects.

A major row has also blown up at the Aston research unit on ethnic relations, which is now set to move to Warwick, over the appointment of a new director drawn from the professorial ranks at Warwick with the current director, Professor John Rex, urged to take early retirement.

A final decision on the future of all four units, which cover population studies, industrial relations, socio-legal matters, and race relations, is to be made at the next ESRC meeting on July 19, when future budget and staffing levels are to be fixed.

The council is being asked to approve changes which would remove the air of permanency which has surrounded the four units since they were set up in the early 1970s and to turn them into Designated Research Centres funded for a further eight years only, with a review after four years.

The staff have prepared their own paper arguing that the changes are still being done for "administrative convenience alone" and that at no time during the discussions during the past year have academic arguments been used.

The staff, more than 50 in the four units, also point that all the recent review panel reports came out in favour of the continued operation of the units, in some instances recommending increases in the current budgets and research programme they scrutinized.

At Aston, informal approaches to instal Professor Robin Cohen, professor of sociology at Warwick and a specialist in African and Caribbean studies, as the new director of the ethnic relations unit has infuriated some staff.

They are now reconsidering whether they would be prepared to move to Warwick, where the industrial relations unit is already based, if the council agrees to the recommended move.

The council however, already seriously short of funds, is anxious to iron out anomalies in the current pay structure of units' staff, caught between university and civil service pay scales. Unit staff do not have tenure but do benefit from a higher non-contributory pension scheme worth between £300 and £700.

The council has promised to discuss fully all the fears of the units, staff and in particular the problems of the 14 staff still at the Aston unit. It is already committed to spending just over £1m on the four units next year, including £320,000 on the Aston unit. But it will want to run down its commitment thereafter, eventually hoping industrial universities will take on the responsibility for specialist research in these areas.

The Association of Learned Societies in Social Sciences has also written to the ESRC expressing its concern about the way in which the decision was made.

Mr Ken Shoji, a Japanese student at Edinburgh University, takes part in a life class in a scene from a new film produced by British Council to publicize British higher education overseas. Three universities and one polytechnic are featured in the 24-minute film, which had its premiere in London last week. Entitled *Degrees of Excellence* the film was made with the aid of a grant from the £46m package of additional Government support for overseas students, and sponsorship from the British Tourist Authority.

It contains interviews with foreign students at Warwick and Edinburgh Universities, Imperial College, London, and Brighton Polytechnic. The film is intended to be shown at British Council offices throughout the world, with council staff on hand to give advice on courses. There was some criticism of the film at its first showing before an invited audience for presenting too rosy a view of life in British higher education. There is no mention of fee levels, for example.

BMA opposes private medical school plans

The British Medical Association this week came out firmly against plans to set up a private medical school in London. Dr Paul MacLoughlin has revealed to BMA officials that he hopes to use premises at Bedford College, which is to be bought by an American university, to open a new school next January.

The BMA is opposed to the plans because it wants to reduce medical school student numbers. The association's annual conference in Manchester called for a reduction in numbers below the 1979 level, the current bench-mark in the medical manpower debate. Present medical school intake stands at 4,080 a year, compared with 3,750 in 1979 – the difference is roughly equivalent to the intake of two medical schools.

Dr Colin Smith, a member of the BMA's medical academic staff committee, said: "It seems absolute nonsense to start a new school where there is this pressure to reduce numbers". The association is concerned that medical unemployment will grow if student intakes stay at the present level. Dr Smith pointed out that the 50 students Dr MacLoughlin plans to take would be 15 per cent of the reduction now sought.

Dr MacLoughlin, a Harley Street fertility specialist, said earlier in the year he hoped to use the old Royal Free Hospital School of Medicine for his private establishment, to be called the Hunter School of Medicine. BMA officials now understand those plans have been revised to take in Bedford College.

Dr Mcloughlin wants to take between 20 and 40 British students, paying around £7,000 a year, together with others from Brunei, America, Canada and Arab countries. He has not yet made any formal approach to the General Medical Council, who may be expected to take the BMA's reservations seriously.

Welsh charter

The Privy Council has granted a new Charter to the Welsh National School of Medicine in Cardiff. From July 26 it will be known as the University of Wales College of Medicine. The new title specifies that it is the only medical training institute in the Principality. The Charter is set out to update the previous 50 year old one, and it offers wider representation to health authorities in Wales.

External checks approved 'Marxist' OU course

continued from front page

other forms of instruction. He requests a review of the course and the amendments, withdrawal or replacement of materials as necessary.

But this request has been refused by Dr. Horlock. In his reply to Mr Hancock he says the course has already been subjected to "some of the most exhaustive external and internal evaluation of any of our present courses". The review already undertaken has "established the singular success of the course as a whole".

Dr Horlock says: "My colleagues and I do not believe that the complaint forwarded by you identifies or raises issues which had not already been identified, either in the original production of the course, or in the discussion surrounding the agreed remake."

The course team say in a response which accompanies the vice chancellor's letter: "We find nothing in the DES complaint to change the substance of our views about the original conception of the course, about our experience of presenting it, or about our agreed plan for revisions."

"The charges made in the DES complaint about D102 are severely undermined by important misunderstanding about the teaching purposes of the (relevant) study block and its place in the course."

The course team says it believes "the impartiality of the complaints is called into question by an apparently single-minded concern to produce evidence to demonstrate the charge of bias".

Apart from the external academic assessment procedures, the OU also monitors reviews of students about courses through a series of questionnaires. Of the tiny numbers of complaints received by the university itself of political bias in D102, they were about equally split between claims of left-wing or right-wing prejudice.

The dean of the OU's social science faculty, Dr Mike Fitzgerald, said this week he believed the content of the course had been misunderstood. The aim was to introduce students to social studies at foundation level.

Last week the university's academic pro vice chancellor, Professor David Murray, and Dr Fitzgerald recommended to the senate that no further review, in the form of a new external assessment, should be undertaken.

The senate unanimously agreed, accepting that the faculty had "seriously and responsibly" inquired into the allegations.

Mr Giles Radice, Labour's chief spokesman on education, is to raise the matter in the House of Commons. He said this week: "There are a number of disturbing aspects to the DES complaint about this course. First, there has clearly been a determined campaign by right-wing members of the Conservative party to discredit the Open University.

"There is also the issue of unprecedented interference in the content of a specific course. I do not believe that it is the job of the Secretary of State to sit in judgment on how or in what way subjects are taught."

Leader, back page

Trouble brews over staff cuts

by David Jobbins

A dispute is blowing up between the college lecturers' union and West London Institute of Higher Education over staffing plans which include the possibility of compulsory redundancies.

Teaching posts are also under threat from the Labour-controlled Gwent county council which earlier this year abandoned plans to impose extra teaching loads on about 400 lecturers on pain of dismissal.

At West London governors have called for an investigation of compulsory redundancies if all other ways of shifting student-staff ratios from their present 10:1 to 13:1 fail.

Vice principal Mr Murie Robertson said this week: "The governors' academic staffing committee has been authorized to consider the application of compulsory redundancy. This remains an option to consider when all other methods of achieving the savings necessary have failed. It would only operate under certain prescribed conditions such as course or departmental closures, or substantial reductions in student intake".

He said there was no plans for departmental closures and rejected a claim by the National Association of Teachers in Further and Higher Education that the aim was to switch resources away from vocational and professional courses to courses such as performing arts and computer science.

Natfhe members are meeting today to consider how to oppose compulsory redundancies with declaration of a dispute and a one day strike to coincide with the next governors' meeting in October on the agenda.

But Mr Robertson hopes that action by the lecturers will not wreck discussions on a possible extension of the voluntary redundancy scheme which has led to a reduction in staff over the past three years.

In Gwent, the council is planning to reduce the numbers of lecturers in post from the 464 budget figure for 1983/84 to 419 with a further cut to 400 in 1985/86. But union officials do not regard it as a reopening of the recently-settled dispute over hours.

They claim if the council achieves the cuts it is seeking in establishment through natural wastage it will be saving £700,000 a year by 1986, far more than its target of £460,000. In fact at the end of August, only 415 lecturers will be in post, so the revised figure implies an increase of four full time equivalents.

While no compulsory redundancies are involved, Natfhe regional official Mr Don Dale-Jones, said the union still found the plans objectionable and pledged the union would fight them.

Free hand on new ideas

Universities will have to make their decisions on exploiting new ideas when the British Technology Group's rights over publicly funded research are dissolved. Dr Ashley Catterall, secretary of the Science and Engineering Research Council, said this week that the council could not possibly oversee commercial development of all the projects it funded. "We have neither the resources nor the expertise to do so," he said.

Dr Catterall told the Cranfield/UMIST conference on technology transfer that the SERC had around £200m worth of current grants in universities. The council would leave individual departments free to choose whichever method of exploitation they wished.

Despite this clear signal of a hands-off policy on exploitation, Dr Catterall stressed the council was anxious to see results of its research exploited. The SERC would still like to know which companies universities were dealing with, and would encourage departments to consider patenting before publishing.

The final removal of the BTG's rights of first refusal over publicly funded research results is still awaited, although the decision was announced by Mrs Thatcher last September. The Departments of Education and Science and Trade and Industry are still drafting general guidelines to try and avoid loss of British inventions to overseas companies.

DON'S DIARY

SATURDAY and SUNDAY

In retrospect, seem to have spent the entire weekend on the telephone. Many of us seem to be married or related to lawyers. Specialists in maritime law consult specialists in anti-trust about contempt of court, cursingthe inaccessibility of sources at weekends; by Sunday night two groups have confessed around firms of solicitors, and a counsel has been briefed for Monday morning in court. On Saturday night, in the middle of all this, I go to *The Tyrant* again, and write six pages of notes for Monday's seminar. Tiny theatre: hope the actors didn't mind.

MONDAY

Union meeting at 9am; we pool our various bits of legal advice. Students' files, with their photographs, are collectected by the registrar against opposition from the secretaries – one locks her door and gives the key to head of department, saying this is his job, not hers. At lunchtime, another summons to staff to Holloway Road to look at . . . guess what. Cancel yet another class, park even further away, go to Natthe meeting, which continues past the director's deadline as we draft a resolution, with the usual problems of academics trying to write a coherent piece of prose in committee. We are interrupted by a poly solicitor, very dapper in a three-piece suit; he tells us Mars-Jones J. has just accepted that the governors have done all they can to identify The Photographs. We cheer him, and return to Kentish Town with a sense of anticlimax; if this were put on stage it would sound unrealistic and contrived. Meet assistant director on the stairs; he asks ruefully if I think this affair will have a cathartic effect on the poly. Think of reply about it depending who gets purged, but suppress it.

Two hours later, again like a bad play, we learn the second half of Mars-Jones' judgment: he had given Harrington's solicitors permission to name any staff they think likely to be able to identify the students, and these will be served with orders by process-servers tomorrow. Alnrm and despondency spread; meeting rapidly arranged with solicitors at S's house at eight. Ring P. and give directions, as I have a class until nine. Find small group of police in hall, and inner doors removed; clearly no storming of barricades tomorrow. Take MA class on *The Tyrant* – somewhat preoccupied, but questionnaire works well – and arrive late at lovely Victorian house with curly mouldings and stained glass. Drawing-room packed with colleagues and two groups of solicitors; S's teenage daughter happily passing round coffee, biscuits, wine, as brisk meeting goes on till past eleven. Finally get to bed at one am.

TUESDAY

Raining hard. Long row of police in front of Kentish Town, crowd barriers on both sides of the road, a growing crowd opposite, because poly student cards (with photographs) are being checked at the door. Wonder crossly why no one thought of doing this earlier. Police in corridors in twos, calm and business-like; a history lecturer is said to have recognized a recent graduate among them. Give class on Tardieu. Students decide to line stairs and picket silently. Watch Harrington's arrival from upstairs canteen. Chanting from over the road of "The National Front is the Nazi Front", "Black and white, unite and fight", and such, but silence held inside. Long but polite argument with colleague who completed his affidavit. He tells me 22 lecturers have done so, but identified no students; 50 of us are wondering nervously about process-servers.

Shrieks from over the road as Harrington leaves, some egg-throwing, and several arrests. News spreading fast – eight arrests outside, none inside; process-servers are in the building; R., warned they were after him, went back to his room like Wyatt Earp down the streets of Tombstone, to find two large men delighted to see him so that they could serve someone in person. Pattern gradually emerges – Harrington's solicitors have chosen the day-time course tutors from Kentish Town, plus five from Ladbroke House (sociology and allied subject). The grapevine also tells us about the tipstaff attending Harrington's lecture on Hume's theory of ethics, and stopping "provocative" discussion by other students.

Meeting in evening, in theory to help and show solidarity to colleagues appearing in court tomorrow, but far too much talk about publicity. Someone suggests picketing the High Court tomorrow; I can feel P. stiffening with horror at the thought.

WEDNESDAY

P. goes to court to watch cases; we try to teach normally, but tend to drift about asking "Any news?" Everything is taking much longer than expected, and Mars-Jones is hearing the case in chambers. The two identified students have been bound over, Mars-Jones having been convinced by their apologies. Spanish orals go on efficiently all day; I try not to think of main examinations in two weeks' time, arrangements well behind schedule. French students come round, expressing shock and support ("They can't do this to Ron!") Several have written to *The Times* about its unfavourable editorial, and are surprised their letters haven't been printed. Dear little souls. English lecturer and class are reported to have done a deconstructionist analysis of said editorial. Police on the door again; tomorrow Harrington has his last lectures for the term. Thank heaven for that.

MA first year class – Michelene Wandor on feminist theatre, followed by lively discussion. T. wanders in at eight o'clock, tired but indomitable, to tell us the case is adjourned until tomorrow.

THURSDAY

Find barriers up again, and familiar row of police. Harrington has attended one lecture, boycotted by the other students, and left. Poster on main door says "Happy Birthday, Harrington", inside a pink triangle. Show *Guardian* cartoon about policeman attending philosophy lecture to group of police inside who fall about. Large crowd chanting over the road during Harrington's afternoon lecture, but silence largely held by inside picket. See Harrington for the first time as he gets into police van, or at least the back of his head – very Vidal Sassoon. Angry crowd opposite surges over pavement; police push them back, no arrests, in face of considerable provocation. One silent group of protesters stand holding banner labelled "London Federation of Jewish Students". Eventually the crowd disperses. Hear Mars-Jones is minded to give judgment against tutors, but will give reasons tomorrow. Evening teaching normal.

FRIDAY

Morning spent discussing draft of MA dissertation. At lunch, hear that Mars-Jones has ruled against tutors, but given leave to appeal; the argument now seems to be about discovery rather than contempt. Much discussion of Norwich Pharmacal and Sunday Graphic cases – we're learning fast. The appeal sounds worth trying, though the potential cost is alarming. Touched to find that students have started a "fighting fund". Find T. filling in a poly expenses form for "coffee at the High Court". Go home about six and sleep like the dead. Lovely wet Bank Holiday weekend – no one rings up at all – marvellous.

Eileen Cottis

The author is senior lecturer in French at the Polytechnic of North London.

BTEC revises its priorities

by Patricia Santinelli

A new set of immediate priorities including quality improvement, a better balance of programmes and a faster response rate to technological developments was expected to be agreed by the Business Technician Education Council yesterday.

If agreed, the new priorities, which will govern the work of the council for the second half of this decade, will be embodied in a policy statement likely to be published in the early autumn.

The priorities emerged from four months of wide-ranging consultations which confirmed that no radical changes were needed, but that the council should take an evolutionary approach by building on what it had already achieved.

The BTEC consulted 2,300 organizations – polytechnics, colleges, professional and education bodies, industry and trade unions – from which it elicited a 20 per cent response.

As a first step to achieve quality improvement, the council has already created a new quality and assurance control post. The appointee's first job will be to undertake an immediate review of standards across the board.

In order to improve the quality and consistency of BTEC provision in colleges and other centres, the council plans to strengthen the effectiveness of its validation procedures, by issuing clearer guidelines, simplifying and reducing paper work, increasing personal content and keeping the cost of the process within reasonable bounds.

These changes would go some way towards meeting concerns expressed by both colleges and polytechnics, but do not meet the latter's desire for greater discretion or some kind of partnership in validation. The BTEC says that on this count is will await the results of the Lindop review.

The council intends to strengthen and overhaul its moderation system. This is seen as the keystone to consistency in standards. It will do this through a modest increase in the number of full-time moderators – a large increase would be too expensive – and through the better selection, training and retraining of part-time moderators.

In order to ensure a better balance of programmes and because of the increasing blur of occupational areas, the BTEC intends to move increasingly towards common-core studies in a range of courses. This is seen as particularly necessary in the engineering and technician field where there is an increasing demand for "hybrid" or "cross-disciplinary" engineers.

In the same way the council intends to ensure that its courses provide for the personal development and general competence of the student as an individual, not as a separate item but as an integral part of vocational studies.

Another priority, the faster updating of course content and provision to reflect technological development – being particularly sought by industry which felt that the education system was still too slow in its response to changes.

The BTEC will also be committed to improving its administration, particularly as regards student records and the distribution of awards. Administrative problems have been a long-standing issue, but more recent criticism has implied that the advantages of a flexible BTEC system were being heavily outweighed by cumbersome, ineffective, and bureaucratic procedures.

Action plan boycott still likely

by Olga Wojtas
Scottish Correspondent

Two major amendments by the Scottish Business Education Council on implementing the Government's 16 to 18 action plan are unlikely to stave off a boycott of further education lecturers.

Further education members of the Educational Institute of Scotland voted in a secret ballot by six to one to boycott work on the action plan, unless there were immediate guarantees that the scheme would not be available to private agencies. The EIS called on Scotbec to reject a report allowing private sector involvement in the plan.

The report, produced by a joint working party of Scotbec and the Scottish Technical Education Council, was accepted by Scotbec, but Scotbec added two amendments.

The first stipulates that any centre wishing to be validated will have to be open to scrutiny by the Scottish Education Department. The second adds that before any private centre is considered in the coming session, the criteria for validation and the fees for moderation and assessment must be approved by Scotbec and Scotec.

Mr Andrew Moore, Scotbec's chief officer, said: "We feel we've got suitable guarantees that we will concentrate our efforts on schools and colleges in the first year, and only then move on to centres of which we've had experience."

But this is not likely to mollify the EIS further education section, which is due to consider its response at the beginning of August.

Initial action proposed by the EIS includes refusing to validate or examine the scheme, withdrawing from all Scotbec and Scotec committees and blocking the transmission of grant documents to the SED which could be used by private training centres.

Collection of an individual nature

Illuminated manuscripts, early printed books, music, coins, and oriental items, all part of the Francis Douce legacy left to the Bodleian library 150 years ago are on show in Oxford until October 27. Douce (1757–1834) was one of the first to appreciate the fascination of the more trivial items of his day, such as playing cards, children's stories and cheap popular prints and at one time was a British Museum keeper.

History defence group seeks to woo back schools

by Paul Flather

History lecturers are out to strengthen their links with schools as a result of growing concern about the decline in the number of pupils opting for the subject beyond the age of 14.

The History at the Universities Defence Group, set up to defend the discipline after the 1981 Government cuts, feels it should establish a clear working relationship with schools where the subject is being "crowded out" by more scientific and vocational subjects in the curriculum.

At present official figures show that the only O level subjects with a declining entry are history and Latin. All other subjects, buoyed up by rising demographic trends, are attracting increasing numbers of candidates.

The history group has decided it must try and reach pupils before they give up history at the age of 14 and must try to emphasize the special skills taught by the subject, such as teaching about values, and comparisons over time and between cultures and societies.

The group has organized a series of regional conferences in Birmingham and Manchester, which was addressed by Professor G. R. Elton, regius professor of modern history at Cambridge, Glasgow, Newcastle, and Oxford universities, to allow history dons to air their views.

The group has been strongly influenced by a paper at the Oxford conference by Mr Martin Roberts, headmaster of Cherwell School, Oxford, which stressed the seriousness of the position of history in schools and called for a lead from universities in defending the subject.

Mr Roberts said that in a crowded curriculum history suffered from being a blurred image. Its position for the 14–16 age range was insecure "because its significance is less clear than that of competing subjects". Thus geography had a stronger quasi-scientific appeal, while languages were given high status because of their potential usefulness.

He urged historians to go on to the offensive, arguing for history's major role within the humanities and describing more space from the sciences. "There are strident and fashionable demands on curriculum time which easily drown the sometimes pale pleadings of heads of history," he pointed out.

Student squatters leave NUS building

Squatters who occupied the London headquarters of the National Union of Students for 10 days this week voluntarily left the building and spared the organization the potential embarrassment of enforcing a court order.

The squat ended after NUS president Mr Phil Woolas agreed to put their demands to the next meeting of the union's executive later this month.

The NUS, worried that the situation would upset delicate negotiations with a purchaser of a lease on the building, which has been empty since the move to Holloway Road a year ago, successfully applied for a possession order last Friday, while the squatters tried to secure an adjournment.

The possession order was sought after the 10 or so squatters turned down Mr Woolas's offer of alternative accommodation.

Negotiations with the prospective purchasers of the lease, the Institute for Environment and Development – a Third World environmental agency – are now proceeding with an "imminent" agreement.

Terms of the deal have not been disclosed, but the NUS has been seeking around £55,000 for a 15 to 25 year lease on the building.

The NUS says that many of the squatters' demands are covered by existing policies, such as support for action on student homelessness and research into the problem. But other issues such as earmarking of money from the sale of the lease for housing campaigns is unlikely to be conceded by the executive.

The squatters remained highly critical of the NUS leadership as they prepared to leave the building. "We have been pretty disgusted at their attitude all the way along the line," one said.

MRC cuts prove cause for concern

by Jon Turney
Science Correspondent

Medical scientists are anxious about the outcome of next week's meeting of the Medical Research Council, which will try and trim the council's commitments over the next three years. Further cuts in university grant support, and possible unit closures, are likely to be put forward to keep the MRC's spending in line with reduced budget guidelines from the Advisory Board for the Research Councils.

The problem stems from a decision last year by the ABRC to shave the budgets of the MRC and the Science and Engineering Research Councils to help the Natural Environment and Agriculture and Food Research Councils with restructuring costs incurred in closing laboratories and paying for staff transfers and redundancies. This is the money the two contributing councils would normally use to fund new work.

When the ABRC decision was announced last December, the MRC had already made plans based on higher budget forecasts, and suddenly had to face a £2m shortfall for 1984/85. This led to the first round of cuts this spring. The council meeting next week has to make strategic plans for the next few years, when further sums will be lost, starting with £1.7m in 1985/86.

Room for manoeuvre is limited as the MRC wants to protect grants to university researchers. Other savings must come from council research units, but many of these are attached to universities in any case. The likely outcome is more cutbacks in money for programme and project grants as well as in research units.

It is standard MRC policy to review units when their directors retire or leave. Staff now fear that decisions on the future of research units without directors will be taken on financial rather than scientific grounds. Four units have already been marked down for closure or had advertisements for new directors cancelled. They are: the neurochemical pharmacology unit in Cambridge; the biostatistics unit in Cambridge; the pneumoconiosis unit in Penarth in Wales; and the mineral metabolism unit in Leeds.

Closing all four could save around £2m a year, but for the fact that the council has no redundancy agreement with the main MRC staff unions – the Association of University Teachers and the Association of Scientific, Technical and Managerial Staffs (ASTMS). The unions will try and ensure staff from units which are closed are redeployed.

The four boards of the MRC have drawn up lists of the grants and units they support so council can consider priorities next week. Units likely to lose their directors in the near future will come under especially close scrutiny. First on the list is the MRC trauma unit in Manchester, whose director retires this September. No replacement has yet been found.

Eight further units have directors due to retire in the next three to five years, the rough timescale of the current strategy debate. They include the virology unit in Glasgow, clinical and population cytogenetics in Edinburgh, social psychiatry in London, the Dunn Nutrition Unit in Cambridge and the blood pressure unit in Glasgow.

The MRC is not used to managing rapid budget cuts, and unit closures and grant refusals already announced have attracted widespread adverse publicity. Reductions in allocations for laboratory supplies and other overheads also drew stiff protests from unit directors earlier this year. But the council still needs to find the extra savings, and further unrest is in prospect among scientists affected.

Women set to challenge union places

by David Jobbins

A fierce clash is likely between leaders of the college lecturers' union and women activists over the details of a plan for reserved places for women on the union's executive.

Change in standing orders for national council, the body which elects the executive of the National Association of Teachers in Further and Higher Education, are to be circulated to union members for debate in the autumn.

The changes will set aside five seats for women, but the differences within the union spring from what happens if fewer than five stand for election from national council.

The executive view, known to be supported by general secretary Mr Peter Dawson, is that the seats should be filled irrespective of candidates' sex. But activists who pressed hard for reserved seats in the first place, led by the union's women's rights standing panel, feel strongly that the seats should be left vacant if no women candidates present themselves.

There is a precedent for reserved seats on the executive within the union. All the association's 14 regions must have at least one representative among the 26 executive members directly elected by council. In the (unlikely) event of a region failing to be represented among the candidates for the 26 seats, its place remains unfilled. Activists are therefore likely to quote this as a firm precedent for their view when the debate on the rule changes takes place in November.

An announcement that a change was to be made came as expected at the union's July council meeting at the weekend. Delegates also agreed a demand from the union's south-east region for the executive to initiate a sustained campaign aimed at positive action for women teachers with job opportunities in traditional and non-traditional areas. It also demanded negotiation of equal opportunities agreements at local and national level.

Strathclyde goes modular

Strathclyde University is to begin introducing more flexible undergraduate courses next session, its principal, Dr Graham Hills, has revealed.

Dr Hills stressed that the move towards a modular degree system will take place very gradually over the next few years, but will eventually allow students to accumulate around 60 credits to gain a degree. "It is on the side of the student," he said. "The greatest way to motivate students is to let them do what they want, rather than what course regulations somehow require."

Writing in the university bulletin, Dr Hills said Strathclyde was responding to a general belief that subject specialization had gone far enough. "It has been agreed to institute more flexible course structures (not a moment too soon) which will allow the generalists and the specialists to coexist or even to change places."

He added later that as the new system got underway, arts and social sciences would have an important part to play in teaching "communication skills" to students in other faculties.

Most present university systems made it difficult to respond to proposals such as that from the Alvey Committee calling for engineers with management knowledge.

Students from Middlesex Polytechnic's postgraduate diploma in film and television studies shoot one of the dozen videos to be shown next week at the National Film Theatre, London. There will be two programmes, at 6.15 and 8.30 p.m. on Wednesday.

news in brief

Computer staff threaten strike

A clear majority of union members at London University's computer centre has voted in favour of a one-day strike if plans for two new appointments on short-term contracts go ahead, according to the Association of University Teachers.

The union has 55 members out of 80 academic related staff at the centre, which is one of two operated on behalf of the Computer Board for Universities and Research Councils.

Shortage reduced

A shortage of teachers in maths, technical education and physics has been substantially reduced, according to the latest statistical bulletin from the Scottish Education Department.

The SED says that between 1982 and 1983 teacher shortages were reduced in almost all subjects, with the greatest improvement in maths where the shortage was reduced by around 80 per cent. But it warns that around half the subjects which had too many teachers in 1982 have shown a further increase with the largest excesses in Latin, Greek, home economics and history.

Good measure

Suntory Limited, the Japanese whisky firm, has donated £620,000 over five years to the London School of Economics international centre for economics and related disciplines.

The centre was founded in 1978 through gifts of over £1m each from Suntory and the Toyota Motor Co Ltd and it is one of four major research units developed through external funding in recent years.

Warm intentions

A Michigan University professor has proposed setting up an annual American-funded summer school in Scottish studies at his former university, St Andrews.

Professor Graham Smith, director of Michigan's centre for West European studies, said the scheme would be similar to those already run by his university in London and Florence.

Research initiative sought into family matters

by Paul Flather

A new initiative on research into the changing family in modern Britain is being pursued by the Economic and Social Research Council. The subject is increasingly seen as a dominant factor in studying children, employment, care, domestic spending, divorce and separation.

A report commissioned by the ESRC says that current research on the family has been fragmented, diffuse and non-cumulative, with few researchers seeing the family as the strategic key to understanding modern society.

At the same time the family has become an increasingly important political issue, for example singled out by present and previous Prime Ministers, Margaret Thatcher and James Callaghan, for keynote speeches. A study commission on the family was set up, now the Centre for Family Policy Studies.

With one in three marriages projected to end in divorce, and with one in five children up to the age of 16 expected to have divorced parents, there has been widespread, though contested, comment that the traditional family is dying.

The ESRC report, by Mr Robert Chester, a lecturer in social administration at Hull University, recommends a £850,000 multi-disciplinary initiative with special emphasis on links between home life, work, and the state, and the effects of separation on children.

The report urges an end to the perceived low status of researchers on the family. It notes few psychologists interested in the family, equally few sociologists listing the family as a special interest, no university chair in family law, and no British equivalent of the American National Council on Family Relations.

Among the reasons singled out for this are problems of access to families for study; confusions over concepts and theories, for example seeing women as mothers or wives or workers; reluctance in crossing discipline boundaries; and a feeling among women researchers that the family is seen as a marginal issue by a male-dominated research network.

A first step has just been taken with the publication of a British research register on *The Family* of some 350 projects drawn from all academic disciplines, all research institutions, and involving an array of research methods. It is compiled by Mr Chester, who is also head of the research board of the National Marriage Guidance Council. The ESRC has given £90,000 to the family policy centre.

Professor Raymond Illsley, chairman of the ESRC social affairs committee, said it was hoped to launch a major initiative on the family to start in the autumn of 1985. It is hoped to publish regularly updated research registers, already strongly welcomed by the Department of Health and Social Security.

The Family, a register of research in the UK, £4, from Schools Government Publishing Company, Darby House, Bletchingley Road, Merstham, Redhill, Surrey RH1 3DN.

Change of emphasis

Warwick University has appointed a leading figure from local authority education as director of its Institute of Education.

Mr John Tomlinson, currently director of education for Cheshire, will become professor of education at the university and take up his post as director of the institute in January next year.

He is one of the two new major appointments announced by Warwick this week. Professor John Eggleston, aged 57, currently head of Keele's department of education is to join Warwick as chairman of its department of education.

Mr Tomlinson, aged 51, is a former chairman of the Schools Council. In his new post he will become responsible for professional aspects of Warwick's teacher education programme, and of the university's relationships with local education authorities, schools and other educational organizations.

Professor Eggleston took over his current post at Keele in 1967. He has written widely on a range of educational issues, and been involved in several research projects sponsored by the Department of Education and Science. He is currently director designate of a multicultural arts development project, sponsored jointly by the DES and the Commission for Racial Equality.

SERC man launched into European space programme

The new chairman of the European Space Agency council will be Dr Harry Atkinson, the director of science at the Science and Engineering Research Council.

He will take office just before a series of crucial decisions for Britain's relations with ESA, which is Europe's answer to the American National Aeronautics and Space Administration.

British payments to ESA already take up 85 per cent of the Department of Trade and Industry's space expenditure, as well as half of the SERC's space budget. The money helps to pay for ESA's Ariane rocket, and for scientific missions bringing together European partners collaborating on astronomical satellites.

So far, Britain has resisted the wish of other countries to raise the mandatory contribution ESA members pay for the science programme, but this may soon change.

The current ESA budget means that each satellite launched uses up four or five years' science money, including the £10m contribution from the SERC's astronomy, space and radio board. In turn, this dictates that scientists in a single specialist field, like infra-red astronomy have to wait up to 20 years for their turn for an ESA mission.

Long-term plans being finalized by the agency's science policy group call for an increase in the budget to reduce the gap between missions. They are likely to be approved later this summer, at about the time when an internal SERC review group reports on the future of the council's support for space science.

The review group, chaired by Professor Mark Richmond, vice-chancellor of Manchester University, is considering whether to recommend a greater emphasis on ESA in the astronomy board's future plans. Some members of the group believe that a modest increase in the British contribution would bring greater influence on ESA's choice of projects.

But any significant increase in payments under ESA's science programme would squeeze the SERC's domestic space activities, unless more money were found overall.

Youthaid fears for jobless trainees

by Patricia Santinelli

Major new proposals for a post-Youth Training Scheme provision currently being devised by Youthaid and the National Youth Bureau together with employers are to be discussed with employment ministers and the Manpower Services Commission later this summer.

The proposals which will not be put officially to the Government until November are designed as a response to the large number of ex-YTS trainees which both organizations estimate will be unemployed after leaving the scheme this autumn. If the Government is unwilling to take these up, implementation will be sought through local authorities, employers and voluntary bodies.

"The scale and immediacy of the problem demand a quick response," Youthaid says. "No official figures are available but unofficial estimates indicate that some 25,000 young people have left YTS and have no jobs. More seriously it is estimated that around 100,000 or 50 per cent of those who complete their traineeship during the autumn may be unemployed."

Youthaid points out that unemployment among ex-trainees will harm both the young people themselves and the Youth Training Scheme.

Youthaid intends to offer a package of proposals which can be implemented locally by employers, local authorities, education and training establishments, managing agents and scheme sponsors, trade unions, the MSC and others.

For such provision to be successful, Youthaid says it must be acceptable to YTS leavers, reflect as far as possible consensus between the Government and all partners in the MSC, must cope with the numbers involved, and operate within a budget capable of delivering a quality programme.

It is considering a range of areas in which new opportunities might be created. Among these are job creation by local authorities, job extension within existing places of employment, the development of linked provision between employers and education and training establishments to create part-time jobs alongside education and training opportunities.

In order to ensure that these opportunities are open and directed towards ex-trainees, it suggests two methods. One is through subsidies to employers such as an improved and adapted young workers subsidy linked to the YTS or the employment of ex-YTS trainees.

The second would be through grants and allowances such as post-YTS full-time and part-time education and training grants, and financial incentives to encourage take-up of education and training opportunities offered alongside part time jobs.

● A majority of the MSC commissioners agreed last week to raise the £25 training allowance on the YTS to £26.25. TUC commissioners pressed for a larger increase to around £30 plus inflation.

Commissioners also agreed to extend the size and scope of the YTS for 1985/86, by allowing 17-year-olds immediate access instead of having to wait for six weeks.

Call for broad adult strategy

A call for a broad strategy embracing both the training and continuing education needs of adults has come from the Further Education Unit in a new report which takes a critical look at existing provisions.

The report emphasizes that more than half the adult population, mainly people who left school at the minimum age, have not since participated in any formal education or training.

Britain has one of the lowest occupationally qualified workforces in Europe, with workers reluctant to undertake courses and employers unwilling to fund them. Almost half the adult population is not in employment, and for those who are, full and regular work forms a diminishing proportion of their lifespan.

Yet, says the report, there is little or no indication that the education and training strategy required to match these trends will be forthcoming.

The report calls for a dismantling of the traditional barriers between education and training, and for wider recognition in both areas of the value of learning derived from work and experience.

Despite the financial cutbacks, the report finds that adult education providers have been working hard to adapt and develop the service. But as a result, progress has been mainly crisis-led.

FEU Statement on the Provision of Education and Training for Adults, published by Further Education Unit, Elizabeth House, York Road, London SE1.

'Teaching company' link urged

by Jon Turney
Science Correspondent

Universities need to develop links with "teaching companies", just as medical schools have teaching hospitals, Sir Kenneth Corfield, chairman of the Engineering Council said this week.

He said this was needed because it would soon be too expensive to buy the latest engineering technology for universities as well as for the firms where students would eventually work.

Sir Kenneth was speaking at the Cambridge Manufacturing Forum organized by the Institute of Mechanical Engineers to discuss the future of British manufacturing industry. Discussing the future supply of engineers, he said a major problem was the rising cost and short life of modern capital equipment.

There were two possible answers to the difficulty of providing universities with state-of-the-art equipment, he argued. Both would be very difficult to put into practice. One path was to concentrate resources to make very costly equipment available to as many students as possible and avoid duplication.

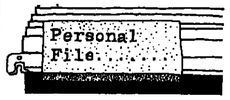
The other was to develop the idea of teaching companies; "companies which are obliged for commercial reasons to install advanced capital equipment would provide training posts for suitable accredited students and graduates," he said.

Sir Kenneth said security of intellectual property and lower productivity of expensive machines would deter companies from taking students, but he insisted that advanced students must be given access to advanced equipment.

On engineering student numbers, he said that the working party recently set up under Mr John Butcher, under secretary at the Department of Trade and Industry, to assess the need for new skills should not be a one-off investigation. The group should consider a new mechanism for meeting needs for skilled graduates in future, he said.

Also in Cambridge, Sir Francis Tombs, chief executive of Turner and Newall, called on industry to match universities' efforts to make links between manufacturing and higher education. "One sees teams of Japanese scientists touring British universities to bring themselves up to date with research," he said. But it was rare to see similar teams of British businessmen.

Catering for NUPE's low-paid thousands



by David Jobbins

Alistair McRae learned his socialism in true Orwellian fashion – in the kitchens of the best hotels and restaurants in Europe.

But, a career as a chef now behind him, he is now fighting for a better deal for the universities' counterparts to Orwell's *plongeurs* – the thousands of catering staff, porters and cleaners for whom he is responsible as a senior official of the National Union of Public Employees.

Born in Inverness-shire 40 years ago into a shepherd's family, he did not attend school until he was 11, taught at home by his mother, a schoolteacher before she married.

At 11 he attended Inverness Royal Academy, leaving at 15 to begin his apprenticeship at the city's Royal Hotel, where he joined a union for the first time, the then General and Municipal Workers' Union. After taking professional examinations at Edinburgh's Napier College, he worked in London, France and Switzerland before returning to Scotland and Edinburgh's Prestonfield House Hotel, which he still regards as the city's finest restaurant.

As trade union and other political work began to occupy more of his time he moved to the Telford College of Further Education in Edinburgh as head chef. Having already joined NUPE – "I had always believed in the philosophy of industrial trade unionism which is central to NUPE's philosophy" – he had first hand experience when he guided a group of women kitchen workers through their dispute.

He got his first full-time job with NUPE in 1972, as an area officer responsible for 8,000 in 28 branches stretching from the English border to the Shetlands. Three years later there was promotion to the Edinburgh office where in 1978 he became assistant divisional officer for Scotland.

His move south in 1982 came when he became national officer responsible for local government and the universities, with a further promotion on this summer's retirement of his predecessor, Mr Harold Wild, to national secretary adding the water industry to his brief.

He has also just become secretary to the trade union side of the central council for university non-teaching staff, the umbrella representative body in face-to-face discussions with the vice-chancellors.

Alistair McRae: firmly on the left

A recent predecessor was Mr Rodney Bickerstaffe, now NUPE's general secretary, and Mr McRae has also united his acerbic criticism of the vice-chancellors' slow progress in tackling the low pay question and their unwillingness to disclose their own salaries.

Political activity began in the Scottish National Party, an arena now totally incompatible in the 1960s with socialism. Active on the SNP's organizational side, he was secretary to the party's Lothian region for a period. The break came when he was selected as candidate to the Dundee East constituency still held by the SNP.

Campaigning alerted him to politics which he could not accept. He left, joining the Labour party in 1970 after a year in the cold.

During his Labour party years in Edinburgh he was variously chairman of the Lothian regional Labour party, secretary to the Edinburgh district party, and chairman of the joint trade unions committee in the region.

Accepting his place firmly on the left in the party, he is a vice chairman of the Campaign for Labour Party Democracy, the umbrella organization which forced through the party's constitutional changes in the 1970s, and a member of the left-wing anti-Militant pro-Kinnock Labour Coordinating Committee national committee.

"I am astonished at the ostrich-like ability of some of the finest brains in the country in university management to convince themselves that tempering and accommodating with a government which is fundamentally opposed to education will somehow protect their position," he says.

Training decision delayed

by Patricia Santinelli

The Government may issue its first directive to the Manpower Services Commission if it refuses to support the White Paper *Training for Jobs* proposals at its meeting later this month.

The warning came from Mr David Young, chairman of the MSC, after a meeting of commissioners last week, at which it was asked to go ahead with discussions at national, regional and local level.

Last week's meeting of commissioners did not take the expected vote on the White Paper – if it had this would have been six to three against – or on the proposals put forward for its implementation by the MSC because of a last minute decision by the Association of County Councils to attend negotiations.

The White Paper has proposed the transfer of funds and responsibility for 25 per cent of all non-advanced further education away from the local authorities to the MSC. This has been vigorously opposed up to now by both the ACC and the Association of Metropolitan Authorities.

Last Friday, however, the MSC had its second meeting that week with the ACC to discuss proposals put forward by its education committee, whereby local authorities would suffer no loss of cash, although the commission could become the paymaster for some further education and be entitled to consultation about work related courses.

Negotiations are now to continue with the ACC at officer level, and will also begin with the Welsh Joint Education Committee which appears willing to talk. The AMA was due to consider its position at a meeting this week, but only a fortnight ago reiterated its total opposition to the White Paper, and said it would go ahead with its own review of non-advanced further education.

A confident Mr Young said that if the AMA was not willing to come to the table, then it was quite likely that funds would be directed only to county councils, and they would go it alone without the metropolitan authorities.

"However I am an incurable optimist, so I am hopeful that the AMA will come round to talks, if for no other reason than the money. We have plenty of time and it is by no means too late to organize a start for 1985," Mr Young said.

In fact the commission has written to Mr Tom King Secretary of State for Employment to say that it will seek urgent meetings with the AMA as well as other organizations.

Mr Young also made it clear that the commission was prepared to be flexible, for example it would not insist on a national steering group if this was generally opposed. There are however rumours suggesting that both the commission and the Government are only biding their time until the end of the month before they act.

The reluctance of the comissioners to endorse the proposals was immediately seized on by the lecturers' union, the National Association of Teachers in Further and Higher Education.

At the weekend, Natfhe's national council welcomed the commissioners' stand in resisting pressure to implement the Government's plans, and said ministers must recognize that it reflected "condemnation of the Government's ill-defined and ill-conceived policy which has been voiced by the full spectrum of education opinion.

Language difficulties loom

by Paul Flather

Local education authorities who have refused to take on foreign language students as school "assistants" may now face retaliatory action from European nations when their students apply for school placements as part of their language courses.

The number of foreign language assistants taken on by local authorities in England and Wales has declined dramatically because of central Government cuts since 1979/80, causing increasing concern to language teachers who are finding it more difficult to place students, an average of 2,000 per year, overseas.

The Central Bureau for Educational Visits and Exchanges, which organizes the assistants scheme, reports that last year alone, some 600 students were unable to find placements in France. England and Wales took just 18 assistants from Italy but sent 48 to Rome for dispersal in Italian schools.

The bureau has now been told through informal channels that unless more European assistants are taken on in Britain, English language students from authorities who take no assistants will not find places overseas.

Figures compiled by the bureau reveal that in the early 1970s, England and Wales sometimes supported around 2,000 more assistants than were sent out to France, Germany, Spain and Italy.

But in recent years, more students have been exported than imported, and the bargaining power of British language teachers to demand places abroad has fallen correspondingly.

The issue has been taken up by the Joint Council of Language Associations, representing some 6,000 teachers in schools and higher education institutions, which has called for central government funding for assistants as in France and Italy to avoid anomalies.

At present, certain authorities like Avon County Council, Manchester District Council and the Inner London Education Authority, which supports some 10 per cent of the incoming assistants, are regarded as "good" authorities, while many others including Cumbria, Sandwell in the West Midlands and Sutton have not hired assistants for several years.

Mrs Rita Wright, the JCLA general secretary and head of modern languages at Bexhill College, East Sussex, said the position has become very serious. Assistant placements were a vital way of keeping up to date with new materials and authentic speaking styles, she said.

The JCLA is calling for a national policy on language provision with more in-service training for teachers, greater support for the central bureaux, where staff has been cut from about 100 to 78 in recent years, and more collaboration on international publishing of language materials.

The council has sent its policy statement to ministers and officials at the Department of Education and Science, all local authorities and professional bodies. Sir Keith Joseph and the Secretary of State for Education, has agreed to attend its next conference in March 1985 at Bradford University.

Meanwhile, a DES survey on the issue of language assistants is expected to be published later this year, when it is hoped the funding of assistants may be reviewed. The Nuffield Foundation inquiry into modern languages is also expected to comment on this problem.

Final brush up: finishing touches are put to one of the models in the fashion show staged by students at St Martin's School of Art

Biotech plans still in air

European research ministers made little progress on finalizing plans for a European Community programme in biotechnology when they met last week. Despite hopes that agreement on an outline for the community budget at the Fontainebleau summit, there are still doubts about funding for this and other new EEC initiatives in research.

British officials still want to see changes in the biotechnology proposals, which currently call for a £50m, five-year programme to coordinate research and training in key areas of the new technology. Doubts about the willingness of prospective industrial participants may combine with the budget delays to keep the European commission waiting for a decision until the end of the year.

The European parliament also has to consider the plans before they can proceed. However, the research ministers agreed to reconvene to discuss biotechnology and a programme of "basic technological research" for engineering before the end of July.

Scottish WEA calls for equal treatment

The Scottish Council of the Workers' Educational Association has warned that it faces a deficit of more than £20,000 by next March.

A deputation this week met the Scottish Office minister for industry and education, Mr Allan Stewart and called for more funds. It also urged him to consider bringing its funding into the with England and Wales.

The WEA receives a central government grant south of the border, three quarters of which is earmarked for teaching. But in Scotland, only administrative posts are met by the Scottish Education Department, while local authorities are responsible for funding teaching programmes.

The WEA's Scottish council stresses that it does not wish to specify a new arrangement in detail and believes it should remain accountable to those authorities which fund its work.

But it adds that teaching programmes have developed very unevenly, since local authorities have different policies towards adult education.

There is a concentration of WEA courses in the west and central belt of Scotland and in the Aberdeen area. "Large parts of rural Scotland are not served adequately, or at all, despite the fact that requests for courses or other educational facilities come to us from these areas," it says.

The Scottish council has also told Mr Stewart that between 1983/82 and 1983/84, the grant in England and Wales has increased by 21 per cent, while the Scottish grant has increased by only 12 per cent.

The WEA provides a larger educational programme than any other voluntary body in Scotland, with classes for around 7,500 students, it said. But it has fewer than 20 field workers and administrative staff in the whole country. And it has told Mr Stewart that staff cuts will be inevitable if it has to cope with its current financial burden for much longer.

The WEA has also urged the minister to provide funds for work with unemployed people following a £2m grant over three years from the Department of Education and Science in England and Wales.

Lecturers' unions to merge

by David Jobbins

A union merger is expected to lead to a more coherent approach to adult and continuing education in the colleges and autonomous institutes.

The 3,400 member Association for Adult and Continuing Education, which represents adult education staff outside the colleges, and the National Association for Teachers in Further and Higher Education, representing 75,000 college lecturers, are aiming to merge on September 1.

A ballot of AACE members gave an overwhelming 889 to 42 majority for the move which for the first time bridges the gulf separating the adult institutes from the colleges.

Union officials are now working to lodge papers with the certification officer in time for six weeks' notice to be given for vesting day on September 1.

AACE's 80 branches will retain their identities while its 12 regions will become regional standing committees within Natfhe's regional structure. Natfhe has given AACE an unqualified undertaking that its existing staff will be safeguarded, and general secretary Ms Lucia Jones is to become Natfhe's new adult and continuing education officer.

Although Ms Jones will be located in Natfhe's education department, with responsibilities spanning the full spectrum of adult and continuing education, she will also advice Natfhe's officials on salaries and conditions of service issues.

A banding system for subscriptions reflecting the limited hours worked by adult education part timers has been agreed for a transitional four-year period – and has also been accepted for other part timers within the union from 1985. While not a pro rata reduction for part timers, it allows those working six hours a week or less to pay only £12 compared with £21 for part timers working more than 10 hours a week.

Opposition to the merger came from two quarters – traditionalists who felt AACE might be swamped in the larger union and activists who calculated there was more chance of influencing the views of a smaller body.

AACE has remained affiliated to the Campaign for Nuclear Disarmament but it seems this must end with the merger. Natfhe disaffiliated last year after a stormy 12 months of association with the campaign. A thorny problem is what to do about the AACE branches who have taken a lead from the national decision and affiliated to CND.

Short answer

A new group has been established by the Committee of Vice Chancellors and Principals to examine what short courses the universities can provide for industry, particularly in the fields of advanced information and manufacturing technologies. It will be chaired by Professor Mark Richmond, vice chancellor of Manchester University.

UNION VIEW

In recent months increasing attention has been given to the amount spent on basic science in Britain. In late March there was a report published by the Advisory Board for the Research Councils which indicated the very great problems of making choices in the amount spent by the five state research councils, given rising costs. By raising with Sir Keith Joseph whether the science budget would be able to meet the cost of subscriptions to big international science projects such as high energy particle physics at the European Organization for Nuclear Research, Britain's senior science administrators were putting forward almost the unthinkable.

The publication of the advice by the advisory board, for the second time only, does provide valuable evidence of the real decline in the overall volume of resources available for basic research. Since March, though, there has been a number of serious developments which give further cause for alarm, the most recent being the decision taken by the Medical Research Council's advisory board to discontinue work at Addenbrooke's Hospital, Cambridge, investigating abnormalities in babies' lungs, on the grounds of "insufficient funds".

It is therefore of very great significance that the Parliamentary Select Committee on Education, Science and Arts should call upon the ABRC to give evidence the other day and to ask, in effect, "Is there a Government out there that knows what the hell is going on in British science or, if it knows what's going on, does it care?"

All those who are concerned with the future of British science will have been pleased by the clear warning issued by the chairman of ABRC, Sir David Phillips, who said that although the Treasury's green paper on public expenditure and taxation in the 1990s showed spending on science remaining even over the next 10 years, there were reasons why in practice there would be a significant cut in science work. The reason for this is that much of science, particularly in the universities, is being conducted within cash limits which bear no reality in practice to the world outside. The effect this is having on the morale of scientists is very great indeed.

One recent publication in particular makes exceedingly gloomy reading in relation to the amount we spend on science. This is the most interesting book issued by the Organization for Economic Cooperation and Development, *OECD Science and Technology Indicators*, showing international comparisons on the resources devoted to research and development. Figures have to be used carefully and assessments made with caution.

However, the level of research and development expenditure on civil projects in Britain is currently lower as a proportion of gross national product than that of Japan, Germany and France. Moreover, using the same analysis, countries like Sweden, Norway and Belgium have already overtaken us, and countries like Denmark and Finland are almost up to the same relative expenditure as Britain. The OECD also concludes that in Britain there is excessive concentration of government funding into defence and such narrow civil fields as aerospace and the nuclear programme.

There needs therefore to be some significant recognition of the very serious situation we face on research and development spending. What is most worrying is that although science and technology are being cited by the politicians as a means of securing economic recovery, in reality the scientists are not being provided with an infrastructure to effect this.

John Akker

The author is deputy general secretary of the Association of University Teachers.

PARTY LINE

Once upon a time in the West . . .

A black rider swerved in front of Willem's car, braking his big motorcycle so suddenly that Willem almost crashed. By his left shoulder he noticed a car, matching his speed exactly, so close that it almost scraped the paint off his vehicle. The two men inside wore T-shirts, dark glasses. He could not see their eyes. "This isn't just mad driving," he thought. "Who are these people. What the hell do they want?" Then the black rider pointed firmly with his right trigger finger for Willem to pull in. He did so just as the street opened on to Wenceslas Square. "We're police officers" announced the T-shirted men in dark glasses. Passes were flashed, too quickly for Willem to notice any names, but just long enough for him to read the inscription – "Public Department" – the euphemism used for the political police.

When it had first flashed through his mind that the lunatics trying to cause a car crash might be policemen, Willem thought that this might have been some elaborate, bizarre crackdown on bad driving: then, that he might have been the victim of mistaken identity. The Prague police were renowned for that. But the political police? They had a reputation for competence, and much else besides.

"What's this about?" Willem asked. An unintelligible grunt came from one of the T-shirted men in dark glasses, who had by now got into the driver's seat of his car. Minutes passed. Then a man in a tie came up, announced himself as a major in the public department, and said that Willem was under arrest for breaches of the public information decrees.

"But why me?" pondered Willem as he was driven to the police station. True, he worked for the mayor of Prague, a man who had been such a thorn in the authorities' side that they had decided to abolish the city council altogether: the post of mayor included. True, Willem had had some sympathy for Charter 77 and the other dissident movements. But he was a clean cut, law-abiding man: above all, a career bureaucrat for whom it had been the lose of a coin whether he had joined the central government's or the municipal civil service. As for the public information decrees – he had never in his life handled any information remotely connected with the security of the state – the reason given, when, during a periodic bout of paranoia about the CIA, the law had been rushed through the Peoples' Assembly in a day.

The atmosphere changed when they got to the police station. The major started to be polite. He began by inspecting a file, three centimetres thick, with Willem's name on the cover. "Good God," thought Willem, "is all that about me?" He contemplated how many man hours it would have taken to amass such detail: how many phone taps and mail interceptions: and if they were bothering with him, how many others the public department had on file.

Finally, the major explained. "We have reason to believe that you handled some secret information from the Politburo." "Concerning what?" asked Willem incredulously. The major looked embarrassed. He might not like dissidents, or anyone who challenged authority (especially his), but had he joined the public department for this? Willem was hardly a traitor.

"Concerning the Politburo's reversal of its earlier decision to prohibit direct elections to the Prague School Board. From newspaper reports and information received, it appears that you knew of the fact of this change of heart – and the reasons for it – before the announcement by the official press agency."

"But if I did, is that a crime? The official announcement has now been made, with the reasons given. Is my alleged crime to have been told yesterday what others have been told today? Is listening now beyond the law? In any case, a two-year-old could have worked out that the Politburo would change its mind – and why. You know that for a century there has been an elected school board in Prague. Even this authoritarian regime had to decide in the end that abandoning this fig leaf of democracy would create more problems than it would solve."

The interview dragged on. Willem and the major equally bored with its stupidity. But not the men in T-shirts, and the black rider. For once they had been able to set out the fantasies of police life, picked up from the unlawful viewing of American TV from West Germany. Hours later Willem was released without charge.

William Bush, a career local government official and head of the leader's office of the Greater London Council, was stopped on his way to work on Tuesday, June 26, 1984, on Waterloo Bridge, by a man on an unmarked motorcycle who swerved suddenly in front of him; and two men in T-shirts and dark glasses, driving an unmarked vehicle who almost collided with the side of his car. The men turned out to be police officers. Mr. Bush was arrested and taken to Rochester Row Police Station. He was later viewed in connexion with the alleged unlawful disclosure of a Cabinet document relating to direct elections to the Inner London Education Authority. He was later released without charge.

Seven weeks ago at the Association of University Teachers council in Manchester, a politics lecturer from the University of Dundee told of how he had been reported to the local association of the political party to which he belonged for his allegedly unorthodox political teaching. He told the AUT council that, for the first time in 20 years he felt uneasy about what he was free to say. The lecturer was a Conservative.

Sir Keith Joseph, the Secretary of State for Education and Science, has made an unprecedented intervention to change the content of a course at the Open University, *The Sunday Times* reported at the weekend.

This is a government which cares more about power than it does about freedom.

Jack Straw

The author is Labour MP for Blackburn

overseas news

Scholars' haven purged by state

A quiet purge has been taking place during the last few weeks in the Polish Academy of Sciences. The three-year term of the Learned Councils of the academy's institutes elected in 1981, during the Solidarity period, has now expired and the state authorities have used their emergency powers to make sure that scholars of doubtful political outlook would not be reappointed.

Since the purges in the universities of 1968, the institutes have become something of a haven for disaffected scholars, who were banned from teaching or other contact with students, who might be influenced by their views, but who could hold research posts within the academy network.

Unlike some other east European countries, there is no direct link between the Polish Academy and the universities, and occasional suggestions that scholars should be allowed to combine research work in an academy institute with a teaching post in a university, on the Soviet model, have consistently been vetoed on the grounds that this would exacerbate the jobs shortage.

The institutes provided a pool of scholars willing to take part in such initiatives as the unofficial Flying University of the late 1970s, and Solidarity think tanks.

The Learned Councils are appointed by the secretary of the appropriate faculty of the academy, a state appointee, on the basis of a list proposed by the director of the institute. This made it possible for the names of many notable scholars to be removed.

Among those to go are Dr Zbigniew Wojcik (formerly chairman of the Learned Council of the Institute of History) who, in 1982, refused to accept a state award in protest against martial law, Dr Tadeusz Lepkowski, a vice chairman of the Polish Historical Association, who was one of Solidarity's "advisers", Dr Bronislaw Geremek, also a historian, who was one of the experts on Solidarity's National Commission, Dr Stefan Amsterdamski, historian, a former lecturer of the Flying University, and Dr Stanislaw Kowalik, economist and specialist on education theory who was also a Solidarity adviser.

This purge, although affecting mainly the social sciences, has caused alarm among academy members as presaging further government interference in the academy's internal affairs. A new law on the role, status and functioning of the academy is at present being drafted.

The purge is clearly part of a general clampdown on intellectuals. State intervention in the elections for university rectors, and the vetoing of three new rectors (Warsaw, Wroclaw and Poznan) in May has shown how easily university "autonomy" guaranteed in the 1982 Higher Education Act can be overruled by the government if such autonomy is deemed "contrary to the public interest".

In Warsaw University, this intervention evoked further protests from academics and students alike, producing in turn, further repression – the suspension of the university's electoral college, and the disbanding of the programme council of the SIGMA political work centre of the Association of Polish Students.

Next week, the trial is due to open of four leading Solidarity advisers – Jacek Kuron, sociologist, Adam Michnik, historian, Henryk Wujec, mathematician, and Zbigniew Romaszewski, physicist, on charges of subversion.

New law on research considered

from David Dickson

PARIS

French minister of industry and research, M. Laurent Fabius, has announced that the government is beginning to discuss a main thrust of a new law covering its attitude towards and support for scientific research when the current law, passed for a three-year period in the summer of 1982, runs out next year.

According to M. Fabius, who was opening a public exhibition organized in Paris by the National Centre for Scientific Research (CNRS), the new law will continue to reflect the government's convictions that a strong science base is an essential component for a nation's economic prosperity.

It is also likely to include, as before, ambitious targets for increasing expenditure on research and development. The 1982 law requires the government to take steps necessary to raise research and development spending from 1.8 per cent of the gross national product in 1980 to 2.5 per cent next year.

Fabius admitted to the CNRS meeting that the government had failed, so far, to keep to this target. "We must be honest about this, since above all scientists ask for honesty and transparency in the use of figures" he said, emphasizing that the level of expenditure was still significantly lower as a proportion of GNP than most other advanced nations.

However Fabius pointed out that, largely because of the rapid increase in spending on research in the first two years of the socialist government, research and development spending had already increased from 2.15 per cent of GNP in 1983, and was anticipated to rise further to 2.20 per cent this year.

"The very real effort that has been made by France has at least prevented us from slipping back in relation to other advanced nations, and has allowed us to exceed the highest figures ever previously achieved," said M. Fabius, pointing out that the previous high mark had been reached under General de Gaulle.

Earthquakes shake Arabs into action

by Thomas Land

The Arab world is expected to establish an institute of seismology to guide an immense projected construction programme intended to ease the high earthquake dangers of the region.

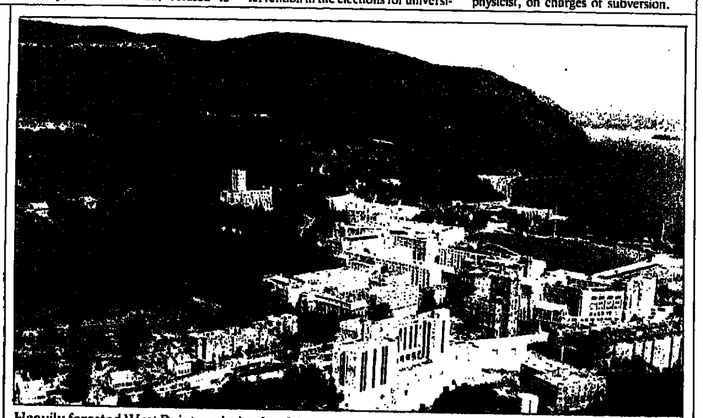
The institution would work very closely with the universities of the Arab countries. Its establishment is envisaged as part of a master-plan, recommended by a group of United Nations specialists, to coordinate the building work.

For the architectural planners of the Arab world have failed to introduce proper seismic building design regulations during the construction boom of the past decade, despite the high earthquake risks in the region. Among the 34 dams built in one Arab country since 1965, only four were originally designed or eventually redesigned for what is known as a "seismic coefficient" of 0.15 – although local earthquakes have produced much higher seismic forces.

Irrigation, water supply and transport systems, industrial power plants, petroleum refineries and oil and gas pipelines have been built throughout the region with even less attention to seismic safety. The UN report concludes that proper building design codes must be evolved and that the existing architectural structures must be fundamentally improved in order to reduce risks.

The study was launched in 1981 after an earthquake in Egypt raised fears of a major catastrophe should the Aswan Dam be breached. The Arab Fund for Economic and Social Development and the Islamic Development Bank decided then to embark on long-term protective action and they asked Unesco to prepare a development master plan.

The proposals have just been published. They emphasize the importance of cooperation by the architectural schools and universities of the region in the training of specialists, especially seismologists, earthquake engineers, architects and planners.



Heavily forested West Point on the banks of the Hudson

Forest sale plan angers Harvard's alumni

from E. Patrick McQuaid

CAMBRIDGE, MASS.

Two years ago Harvard University talked sentimental alumni into paying $100 for a single clipping of ivy, stripped from the student dormitories surrounding the famous Harvard Yard. It was part of a public relations effort to defuse student and alumni protest over plans to remove the vines from several buildings where ivy had loosened bricks. Today's headache for Harvard is an entire forest, located several hundreds of miles away.

Harvard's plan to sell of the 3,800-acre Blackrock Forest were attacked in a 55-page article appearing in the prestigious *New Yorker* magazine during the university's week-long commencement and reunion exercises. The land was donated to Harvard by the Stillman family, one of the nation's wealthiest and the college's more generous benefactors.

Plans to dispose of it are jeopardizing university efforts to drum up $350m in alumni contributions.

The forest is located next to the West Point Military Academy, along the Hudson River in New York. The article, by 1965 alumnus George W. S. Trow Jr., claims that Harvard has violated the terms of the bequest and is giving up a valuable centre for the study of forestry and conservation.

The land was signed over to Harvard in 1949 by Dr. Ernest Stillman along with a substantial endowment that has since grown to over $2.4m. According to Mr. Trow, "Harvard has said that although it is impossible for Harvard to keep the forest, it is possible for it to keep the money."

The sale of the forest would generate about $400,000. That money would be used to fund research at the smaller Harvard Forestry Institute in rural Massachusetts. The buyer is reportedly a wealthy New York resident who would create a trust fund permitting use of the forest by a dozen or more colleges and universities.

Harvard lawyers have said that the sale plan "protects the integrity of the forest because a consortium of educational institutions, including New York University, Barnard, and the State University of New York, will operate it for teaching and research purposes".

The donor's grandson, Mr. John Stillman, a 1940 alumnus and now chairman of the New York State Bridge Authority, said he was "considering a legal action" but will first review Harvard's plans to "protect the integrity of the land".

Many alumni, who are committed to ecology and conservation, have threatened to withdraw their pledge of cash contributions to the university's massive capital drive unless the issue is settled to their liking.

Universities closed after student deaths

from D. B. Udalagama

COLOMBO

Five Sri Lankan universities were closed until further notice after separate incidents last month in which two students were killed by police. The deaths were as a result of shooting incidents at Peradeniya and Colombo universities, but the government was reticent about the origin of the trouble.

A state-controlled daily newspaper, the *Evening Observer*, said that the students had attacked the police post at the Peradeniya University, adding that it was a "planned attack" and that the authorities had information that the National Liberation Front and "other extremist groups" were behind the student action.

The shooting at Colombo followed three days later, when, the official version said, university students at a hostel began to attack passing vehicles and policemen. A bus was set on fire, allegedly by the students.

The Peradeniya University and the Dumbara Campus were closed on June 20 and the universities of Colombo, Kelaniya, Sri Jayawardhanapura and Moratuwa were closed the following day.

The acting minister of defence, Mr. Lalith Athulathmudali, appealed for the cooperation particularly of parents of undergraduates and of schoolchildren to preserve law and order, promising an impartial inquiry into the incidents. A magisterial inquiry into the deaths was held and 15 "provocateurs" were later arrested.

The universities had been troubled for some time, because of Tamil grievances.

The University of Jaffna and the University College of Batticaloa have been closed and reopened since the beginning of the academic year because of Tamil student protests against the activities of the security forces in the north and east.

Batticaloa college also faced a problem with Sinhalese students, numbering around 18, and Sinhalese teachers who have left the college as a result of threats reported to have been made against them. They said they feared for their personal safety and asked to be found places in the universities in the south in the same way as Tamil undergraduates, who fled southern universities last year, were found places in the north and east.

The authorities, however, refused to accede to their demand on the ground that, should Sinhalese students leave Batticaloa, the University College would become a Tamil only institution, instead of the bilingual (Sinhalese and Tamil) institution it has been.

Soviets and US sign exchange deal

The American Council of Learned Societies and the Soviet Academy of Sciences Commission on the Humanities have signed a joint agreement covering scholarly exchange in the social sciences and humanities for the next two years.

The contract signing was delayed a month owing to an unrelated diplomatic incident in which a Soviet mathematician visiting the California Institute of Technology could not decide if he was coming or going. Shortly after his arrival in the States, he said he desired to return to the USSR.

He changed his mind when he was to change planes at a Washington, DC airport. He remained for over a month at a diplomatic compound near Washington, then flew home. He told Americans that he was not under duress, to leave.

overseas news

Senior lecturers take a pay cut

from Benny Morris

JERUSALEM

Israel's senior university teachers have agreed to take a 6 per cent pay cut in order to prevent the dismissal of about 100 junior lecturers slated for the chop because of massive budget cuts.

Announcing this move last week, Professor Ahim Harari, chairman of Professor Ahim Harari, chairman of the Council for Higher Education's key budgets and planning committee, said that the combined deficit of Israel's six universities and the Weizmann Institute of Science stands at $60m.

Harari was speaking at the first meeting of the cabinet committee on higher education set up a few months ago against the backdrop of the severe crisis in the financing of Israel's universities. The government provides about 70 per cent of the universities' budgets.

The voluntary salary cut of the senior lecturers, associate professors and professors, went into effect on July 1 and will save the universities about $70m.

The ministerial committee on higher education is chaired by education minister Zevulun Hammer. Science minister Yuval Ne'eman and industry and trade minister Gideon Patt are its other members.

One senior Israeli academic, Professor Menahem Megidor, chairman of the coordinating committee of academic staff organizations, explained the senior staff's decision by comparing it to El Al, Israel's national airline. El Al staffers two years ago voluntarily accepted substantial wage cuts as a means of pulling the company out of the red. Professor Megidor said: "we are taking this step to prevent the demise of a generation of young scientists (who otherwise would be thrown out of university)."

Professor Shlomo Simonsohn, a historian at Tel Aviv University, opposed the voluntary pay cut, arguing that the academics might end up doing their share but the government would in the end not do its part to bail out the universities.

The chairman of the National Union of Students, Yossi Sperling, welcomed the senior academics' decision, saying it would help ensure the continued existence of Israeli higher education and students' ability to pay university fees.

He was referring to the government demand that tuition fees be doubled to $1,400 – which the student unions are opposing – considered as a measure to increase university revenue.

Meanwhile, the president of the Haifa Technion, Israel's Institute of Technology, Josef Singer, said that the institute's deficit was close to $7.5m and the government wanted to axe a further 10 per cent from the technion's budget in 1984/85.

"If we do not get another $10m for the next academic year, our infrastructure will be destroyed." He warned at a press conference last week. He described 1984 as the most difficult year the university has experienced financially in the past 30 years.

Spending blueprint gets a mixed reception

from Geoff Maslen

MELBOURNE

Australian education groups have given the latest report of the Commonwealth Tertiary Education Commission on federal spending for the next three years a very mixed reception.

While the Australian Vice Chancellors' Committee welcomed the report's recommendations, directors of colleges of advanced education attacked them, as did the Federation of Australian University Staff Associations and the Australian Union of Students.

In its report, the commission called for a modest expansion of the higher education system. It called for a 23,000 increase in enrolments by 1987 and a phased, 16 per cent increase in grants to universities and colleges over the next three years. The commission's report drew attention to cutbacks and rationalizations that have been imposed on higher education since the mid-1970s and called on the Government to provide increased staff, equipment and capital resources to implement a programme of growth.

The chairman of the vice-chancellors' committee, Professor Michael Birt, described the report as a "blueprint for the resumption of the effective development of the university system". He said it was important the commission's recommendations be accepted if progress was to be made towards meeting the Government's objectives.

Directors of advanced education colleges, however, said the commission was out of touch with Australia's national objectives and tertiary education needs. They said that although there was some good news in the commission's report, it had largely failed to come to grips with needs in relation to the social and economic goals of either federal or state governments. The good news was that the commission had recommended the first real increase in tertiary education funding for six years, but the bad news was that it was proposed to do this at a marginal cost per student.

In effect, the commission was proposing that enrolments be increased by slipping extra seats into the back of existing classes and this could only lead to a fall in the quality of education, the directors said.

This was a point taken up by the university staff associations. The secretary of FAUSA, Mr Les Wallis, said the federation was most disturbed by the concept of "marginal funding". There had been plenty of rhetoric in the commission's report but little money to back up its proposals. The real test, nevertheless, was the reaction of the Government to the report, Mr Wallis said.

He said academics were extremely pessimistic that even the modest proposals of the commission would be agreed to. Rumours were rife that the Minister for Education, Senator Susan Ryan, had gone to Cabinet asking for exactly half what the commission had recommended, Mr Wallis said.

Mr Wallis said academics were particularly bitter that a proposed increase in staff salaries of 5 per cent over the next 12 months had been cut back to 2 per cent at the instigation of the Government. Australian politicians had received a 96 per cent increase in their salaries over the past eight years – compared with only an 83 per cent increase in the income of academics.

The Australian Union of Students, meanwhile, joined with college directors in a call for the Government to send the report back to the commission and order it to review all its proposals for new priorities. The AUS said the government could not afford to ignore thousands of potential students who would be turned away from universities and colleges if it continued to put tax cuts ahead of education spending.

A Boulder approach to learning

from P. E. Burke

OKLAHOMA

The board of regents of the University of Colorado has voted to allow professional shorthand writers to take down, transcribe and sell lectures, subject to the approval of the individual instructors. The board acted after several students at the Boulder campus of the university had set up a commercial note-taking service.

The move has now been widely condemned by the heads of several highly respected institutes of learning.

The tone of this condemnation was set by William G. Brown, president of Princeton University, who stated; "Note-taking is an indispensable part of the experience of attending lectures, listening to the professor, reading and thinking about the material and the course. A student who uses notes taken by someone else and sold commercially misses an essential part of his education."

The same line was taken by Hanna Holborn Gray, president of the University of Chicago, who stressed: "Note-taking is an essential part of the education process. It cannot be bought."

A. Bartlett Giamatti, president of Yale University said: "We have another instance of education construed as a consumer item. Education is not something to be bought and sold like a toaster."

David Kennedy, president of Stanford University, opined: "Any student who wants to can find the relatively easy road to an undergraduate education – and it is the student who loses. I wish that the faculty had decided to ban professional note-taking. I believe that it is a matter for the faculty and not the governing board to decide, so I would not blame the regents."

The somewhat jaundiced words of Wally Sterling, a former president of Stanford, perhaps brings the matter into sharp perspective. He told an incoming class; "If all you want is a degree from this place, give us four years tuition fees and we shall give you the degree right now. If you want an education, stick around and do some work."

JENNY MATTHEWS, FORMAT

The medical faculty has been housed in a multi-storey carpark

El Salvador University wants $8m for repairs

by John Bevan

"The only thing that has changed for us since the May elections is that we've got our campus back. This is the only thing that has changed."

This was the attitude of a University of El Salvador source when asked last week about events since the "university city" was restored to the rector, Dr Miguel Parada, on May 22 after nearly four years of occupation by the National Guard.

Although parts of the university administration hope to move back into their premises over the summer there is little hope of a swift return to normality for the 25,000 students who, over the past four years, have been following their courses in improvised rented accommodation.

The initial military attack on the campus in June 1980, which left over 20 students dead, and the subsequent pillage and years of neglect have left the campus in serious disrepair. Libraries and scientific equipment have been totally destroyed and many of the buildings now require partial or total reconstruction.

The university authorities have asked the government for an immediate grant of $8m to finance the reopening by the end of the year of faculties such as humanities which require little or no equipment. It is estimated, however, that well over $20m will be required to restore the campus to anything like its pre-intervention levels.

The authorities see the handing back of the campus as a result of their four year campaign to keep academic courses going despite severe repression and constant threats from both the death squads and the government security forces to which they are closely linked. Since 1980, religious groups, human rights organizations and trades unions inside the country and education bodies throughout the world have pressed for a demilitarization of the campus.

Few observers believe, however, that the recent moves signal either an end to academic repression or a significant political opening in the Salvadorean conflict which has claimed some 50,000 civilian lives.

The university itself is calling for an end to repression, the respect of the university's autonomy and immediate negotiations with the opposition FDR-FMLN alliance. Last week, a university source summed up the cautious reaction to the new Duarte government: "The only change has been the handing back of the campus. The structures of repression have remained untouched and the death squads continue to operate, so the threats of violence to the community as a whole have not decreased. Under these circumstances, how can the university's autonomy be respected, how can academic life develop normally?"

During a recent visit to London, Dr Guillermo Ungo, president of the opposition FDR, saw little cause for optimism. Referring to the ultra-right ARENA party of Major D'Aubuisson he commented that "they have a lot of spies in the university".

New plan for New Guinea

from Mark Bray

PAPUA NEW GUINEA

A commission for higher education, set up last year, is about to draw up a five-year plan for Papua New Guinea, following a conference last month at which all the major institutions were invited to air their views. The plan is to be mounted before the end of the year.

The higher education sector in Papua New Guinea is officially defined to include 60 institutions. As well as the two universities, it embraces the secretarial, technical, agricultural, teachers and paramedical colleges, the Legal Training Institute and the National Arts School.

The keynote speaker at the conference was Dr K. R. McKinnon, who was director of education in Papua New Guinea from 1964 to 1973 and is now vice chancellor of Wollongong University in Australia. Like several other speakers, Dr McKinnon discussed possible tension between quality and quantity. Papua New Guinea only gained independence in 1975 and is a young country still heavily dependent on expatriates. This adds pressure for quantity of output and sometimes requires a sacrifice of quality.

McKinnon felt that Papua New Guinea would be unwise to make too many concessions to quality. He recognized the urgency of political development, but stressed the need for a firm foundation.

At the same time he cautioned against slavish adherence to so-called world standards. First, he pointed out, the expression was unclear. If by world standards is meant the average quality of higher education in the world, Dr McKinnon suggested, Papua New Guinea already had a very creditable system. However if by world standards speakers mean the best in the world, they are making an unrealistic and harmful comparison for a small developing country.

Rather than worry too much about so-called world standards, therefore, Dr McKinnon suggested that planners and practitioners should continuously re-examine themselves and produce the best quality that resources permit.

Discussion also focused on costs. Each year the two universities alone consume 3 per cent of the government budget.

Afrikaners admit blacks

from Craig Charney

JOHANNESBURG

The white university of Potchefstroom has decided to admit black undergraduates – but only as part-time students.

From 1985, blacks will be able to enrol in evening courses offered by the economics, law, and arts faculties at the small Afrikaans-medium university 70 miles west of Johannesburg. However, they will not be permitted to attend regular day courses for full-time students, nor offered housing on campus.

The university's half-step towards integration has been under consideration since 1981, when its governing council decided to investigate accepting black undergraduates (A handful of black postgraduates have been accepted since 1973, mainly to read economics and theology.)

The study took until November 1983, when the council proposed admitting part-time black undergraduates. After comments were received from staff, students, and alumni, the decision was ratified by the council on June 21.

The move was opposed by a minority of council members, and must have been traumatic for a rural institution traditionally serving students from conservative Afrikaner backgrounds. However, Potchefstroom remains far behind the leading Afrikaans university, Stellenbosch, where several hundred full-time black undergraduates and postgraduates study.

Black students derided the decision as tokenism.

Congress confused by court ruling on student loans

Congress is divided over legislation to overturn a Supreme Court ruling that many contend was a misreading of the 1972 amendments to civil rights laws. Four months ago the High Court determined that the laws did not permit the government to withhold student loans and other forms of federal aid from an institution not in compliance with amendments designed to guard against gender discrimination.

Within a week of each other the House of Representatives overwhelmingly approved measures to rewrite the statutes while the senate refused to discuss the bill at all. At issue is the language of the law and the intent of its authors. Advocates for the new legislation seek to clarify four points and show that the laws apply to an entire institution receiving federal assistance and not merely to a specific department or course found guilty of non-compliance.

The court ruled in February, however, that only a course in violation of civil rights statutes could be deprived. If for instance, an athletics course was found to discriminate against women, the college's financial aid office could not be penalized as well.

Under legislation approved by a 375 to 32 vote in the House, the government could cut off aid to a college or university entirely if any part of it were guilty of non-compliance. With a lengthy summer recess and an especially short autumn term scheduled because of the presidential election, it is unlikely that the measure will surface again in the senate. Without approval from both chambers, legislation cannot be sent to the White House or enacted.

A member of the British Animal Liberation Front after a raid on a laboratory at Stock. American groups are now employing the same tactics.

Victims of cruelty or progress?

Peter David reports from America on the growth of animal welfare groups

Americans like to lampoon the British as a nation of fanatical animal lovers. But the joke is wearing thin. In recent years the United States has spawned its own host of flourishing animal welfare groups whose activities are causing growing alarm in the universities which conduct biomedical research.

A sign of the times came last May with a commando-style raid by five members of the Animal Liberation Front (ALF) on a laboratory at the University of Pennsylvania's medical school. After ransacking the laboratory they seized 32 videotapes documenting several years of head injury experiments using monkeys and baboons.

It was a magnificent propaganda coup. The gruelling videotapes, showing pictures of live baboons' heads being smashed by a specially-designed piston, were broadcast by television stations throughout the United States. The National Institutes of Health (NIH), which sponsored the experiments, said it might hold an investigation to see whether its rules on animal welfare had been abused.

The ALF represents the extreme end of a continuum of animal welfare organizations in the United States. Some groups, like the Humane Society, aim only to avoid needless suffering in animal experiments, relying on congressional lobbying to achieve their ends. Others, espousing the novel philosophical doctrine of "animal rights" championed by the Australian philosopher Peter Singer, want an end to all animal experimentation, and resort cheerfully to direct action such as the Pennsylvania break-in.

Together, the two kinds of group pose a formidable double challenge to America's biomedical establishment. In response, the NIH, which funds most biomedical research in universities, has mounted a propaganda campaign of its own to persuade the public that animals are used only when there is no alternative, and that every care is taken to avoid needless suffering.

Earlier this year, for example, it announced its intention to stiffen the already extensive rules universities must obey when they receive grants for experiments involving animals. Under the proposed rules, universities will have to set up animal research committees with qualified veterinarians and members from outside the institution to oversee all experiments and make certain NIH guidelines are being scrupulously followed.

The problem for the NIH is that whenever it appeases one group it alienates another. Dr James Wyngaarden, the institutes' director, clearly hopes that by appearing to set its own house in order on the animal welfare question the NIH will be able to head off more restrictive legislation under consideration in Congress. Yet even the modest changes now envisaged have run into sharp opposition from many smaller universities, which say they cannot afford the quality of facilities the NIH wants.

The new rules will, of course, do little to appease groups which reject all animal experiments on philosophical grounds. And although the NIH has long despaired of striking a compromise with the extremists, it cannot simply ignore their huge public impact. All too often, the activities of the ALF and its fellow organizations unearth experiments which strike laymen as unnecessary, unusually callous, or both.

In 1981, for example, an animal welfare activist posing as a research assistant exposed conditions at a behavioural research institute in Maryland that brought about the first ever prosecution of a scientist for cruelty to animals in his laboratory. Although an original guilty verdict by lower courts was thrown out on a technicality in an appeals court, the NIH conceded that conditions at the laboratory – described as "atrocious" by Dr Michael Fox, scientific director of the Humane Society – were unacceptable.

Often, though, appearances can be misleading. The Pennsylvania break-in is a case in point. The laboratory raided was one of four head injury research centres funded by the NIH. In one stolen videotape sequence, broadcast widely on television, a monkey is strapped to a table with its head encased in a steel cylinder attached to a pneumatic machine. Suddenly, a piston pushed the animal's head sharply upwards. In other sequences, laboratory staff are overheard joking about the animals' plight and referring to them as "suckers".

Yet the laboratory, and the experiments conducted there, are held in reasonably high regard within the medical research community. The experiments are designed to imitate the whiplash suffered by thousands of motorists in car crashes. According to the NIH, the laboratory has received consistently favourable reports from peer reviewers and has made substantial contributions to the treatment of brain damage in humans.

American biomedical scientists acknowledge that they have not always done enough to explain the enormous medical benefits that can be gained from research using animals. That is changing. At an emotional conference in Washington recently, the NIH decided to counter the emotionalism of the animal welfare groups with some emotion-wringing of its own. It invited the families of people whose lives had been saved as an indirect result of biomedical research to present moving public testimony for the continued use of animals.

Some researchers believe the drive to enlist public support is unnecessary. There is, after all, no real prospect of congress banning the use of experimental animals completely. What worries scientists is the danger that regulations governing animal experiments will become so burdensome that they interfere with routine research, or that concern about safeguarding the welfare of experimental animals will drive the cost of experiments out of the reach of many institutions.

Animal welfare groups have already notched up some notable victories. In 1969, for example, animal welfare groups ran a successful campaign to stop the Revlon company from using an experiment entailing the blinding of rabbits to test the safety of its cosmetic products. Last year adverse publicity also contributed to a decision by the Food and Drugs Administration to drop its insistence on use of the traditional LD 50 test, designed to rate the toxicity of substances. In the test, up to 200 animals at a time are administered a toxic substance until half of them die.

Much of the energy of the animal welfare movement is directed at industrial testing laboratories in the food, drug and cosmetic industries. Medical research conducted in universities is a more difficult target, because its importance is more readily understood by the public.

Biomedical research is, nevertheless, anything but immune. Congress is exquisitely sensitive to single-issue pressure groups like the animal welfare lobby, and a clutch of bills calling for an end to the abuse of laboratory animals is almost always under consideration. Several would impose strict criteria on the kinds of experiments allowed, and provide for a massive increase in public oversight of university research.

What most worries the NIH, however, is Congress's periodic flirtation with legislation that would instruct the NIH to set aside millions of dollars to develop alternatives to animal tests. The idea has obvious political appeal – if computer simulations and other ingenious technologies can help researchers dispense with animal tests altogether, legislators will no longer need to balance the conflicting demands of the equally potent medical research lobby.

One leading centre, the Center for Alternatives to Animal Testing at Johns Hopkins University, researchers hope new technologies will soon bring about a significant reduction in the number of animals used in toxicological tests. Its research centres on the in vitro production of cells that can reproduce the complex architecture of the skin and be used to determine the potency of toxic chemicals.

Replacing animals used in research, as opposed to those used in rudimentary tests, is another matter. Genetic variation in living things is so great, Dr Donald Fredericksen, a former director of NIH, pointed out recently, that prediction without actual testing was a "worthless art" in biology.

Under new guidelines proposed by the National Institutes of Health, universities which use live vertebrate animals in research must adhere to the following principles:

- **Experiments must be performed by a qualified scientist, and the housing care and feeding of experimental animals must be supervised by a qualified veterinarian;**
- **The research should be "such as to yield fruitful results for the good of society and not random or unnecessary in nature";**
- **The experiment should avoid all "unnecessary" suffering and injury to the animals;**
- **Animals used in experiments should be anesthetized to reduce suffering except when doing so would defeat the purpose of the experiment;**
- **Statistical analysis, mathematical models, or in vitro systems should be used when appropriate to complement animal experiments and reduce the number of animals involved;**
- **Post-experimental care of animals must be such as to minimize discomfort, any disability caused by the experiment should be treated in accordance with "acceptable practices" in veterinary medicine;**
- **If it is necessary to kill an animal, it should be done in a humane manner and ensure immediate death.**

Tribute to a writer of fictions

Brian Morton marks the death of Michel Foucault, the French historian and philosopher

One of Rene Magritte's most famous and characteristic works depicts a pipe with the cryptic caption "*Ceci n'est pas une pipe*". Magritte is strictly correct for "this" is only a two-dimensional image of an object, unsmokable. Foucault's fascination with the problem of signs and meaning emerged in two works, *Les Mots et les Choses* (*The Order of Things*) and a short work named after Magritte's canvas.

Modern structuralism developed from Ferdinand de Saussure's insistence on the arbitrariness of signs and words. Words do not refer, they have meaning only as points within a structural system. It was typical of Foucault that, while he could accept the first premise, he consistently avoided the structuralist conclusion. He always denied his work any "authority" and had the deepest suspicion for any ideological system (notably Marxism) that attempted to totalize experience. He mocked any grand moral stance and rejected the traditional notion of universalized intellect in favour of "l'intellectuel specifique", dispersed throughout the whole range of human experience and across disciplinary boundaries (thence at least part of the suspicion levelled at his work by academic traditionalists).

Foucault insisted that his archaeological method did not reveal the past but the present, just as archaeology is only concerned with the stratigraphic process by which the present – in its language, culture, institutions – is revealed as resting on the past, and with specific objects and artefacts preserved from the past, often enigmatic or partial. "*L'intellectuel specifique*" concentrates on individual phenomena rather than the statistical and denatured data of the "New History" and much contemporary structuralist thought. Foucault, writing in English in 1982, insisted that his aim was not to analyse power; rather, "my objective has been to create a history of the different modes by which, in our culture, human beings are made subjects". "subjects", of course, remains ambiguous. His route, the route of his whole career, was via first language and philology, then the "dividing practices" that separate men from women, the sick from the healthy, the criminal and the conforming; finally, he focuses on "le souci de soi", the development of self-consciousness that he identified with sexuality.

Though this is in the line of Montaigne, Pascal and Sartre, Foucault's real model was a German philosopher, Friedrich Nietzsche began as a philologist, examining the residue of meaning in words and the process of change of meaning. Like Nietzsche and contrary to Saussure, Foucault emphasized the shifts of individual words rather than of an abstract "*langue*". It was Nietzsche, finally, in the absence of God, who saw the need for a philosophical response to human will, desire and cruelty, and, again in the absence of a theodicy, to explain death. Freud and the Existentialists only went so far. Foucault takes the argument one stage forward.

Like Nietzsche, Foucault has suffered from his unconventional means and style. Nietzsche's *Also Zarathustra* is presented in a highly rhetorical, narrative style far removed from the traditional antinomies and syllogisms of academic philosophy. He also, fatally, permitted an element of irony and humour, corresponding to the human predicament as unique, finite individuals caught in a repetitive, rule-bound history, the subject of Milan Kundera's recent Nietzschean, Foucaultian novel *The Unbearable Lightness of Being*.

Foucaultian is a misnomer since Foucault consciously avoided founding any school. His work is too individual and *sui generis* to be copied. He himself characterized it as a "sinlom" between traditional philosophy and the "abandonment of all seriousness". Such admissions may well have done him harm with mainstream academics. Philosophers found him lacking in rigour, historians attacked his non-empirical approach; it is, however, hard to approach works as complex as *Madness and Civilization* and *The Birth of a Clinic* in a less categorical, literary way (though at the moment a work as full of abstruse ideas as Kundera's is readily accepted as literary fiction). Foucault provides the best and most self-aware characterization of his work in an interview with Lucette Finas: "I am fully aware that I have never written anything other than fictions. For all that, I would not want to say that they were outside the truth. It seems plausible to me to make fictions work within truth, to introduce truth-effects within a fictional discourse and in some way to make discourse arouse. 'fabricate', something which does not yet exist. One 'fictions' a politics that does not yet exist starting from a historical truth."

Archaeologist of concepts

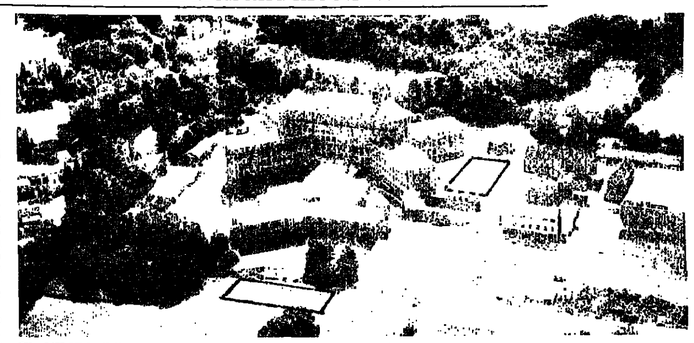
The French historian and philosopher Michel Foucault died in Paris on June 25 of a rare septicaemite infection. He was 57. Foucault's first major work published in 1961, was *Folie et Deraison* (translated as *Madness and Civilization*), a work that examined the development of the concept of mental illness. His *L'Archeologie de Savoir* (*The Archaeology of Knowledge*) appeared in the aftermath of *les evenements* of 1968 and established the central methodological principle of his work: the archaeological exploration and analysis of concepts and institutions.

Foucault held the chair of the history of systems of ideas (a fair definition of his intellectual province) at the prestigious College de France. However, like many French intellectuals of his generation, as well as older figures like Aron and Sartre, he remained deeply sceptical of all institutions. In 1975, he excavated the modern prison in *Surveiller et Punir (Discipline and Punish)*, a concern that led to an active involvement in prisoners' rights. He was also a critical but essentially sympathetic supporter of both gay liberation and feminism, the two lasting theoretical strands of the sexual revolution of the 1960s, and his last work, the massive *History of Sexuality*, set out to establish the place of sexual identity and behaviour in culture. The first volume, *La Volonte de Savoir*, appeared in 1976 to a mixed critical reception. Volumes two and three, *L'Usage des Plaisirs* and *Le Souci de Soi*, appeared this summer. A week after being hospitalized Foucault rallied sufficiently to take note of what have been so far deeply respectful reviews fo the later volumes. The remission was sadly brief.

Foucault's is only the latest of the personal tragedies to have overtaken French intellectual life since the death of Sartre. If Jacques Lacan's death in 1981 was availed and even rehearsed. Foucault's, like Roland Barthes', was shockingly untimely. Their premature disappearance, that of Poulantzas, together with the legal problems faced by Althusser and Derrida, have conspired to reclaim the intellectual as a kind of *penseur maudit*.

Jon Turney visits the National Institute for Medical Research and meets its new director

A place apart?



The NIMR building at Mill Hill: designed to be self-contained

Ask a committee to organize new research and the first thing you get is a recommendation for a new research institute. At least, it was in 1913, when the Medical Research Committee, forerunner of the Medical Research Council, identified a need for a central institute in London. The new venture, the National Institute for Medical Research, was designed to match the glittering promise of the Rockefeller Institute in New York and the Pasteur Institute in Paris. It has been the council's largest non-clinical research establishment for 60 years.

Since those optimistic days before the First World War, some of the gloss has rubbed off the institute. One change is obvious: there are a lot more people doing medical research. Most of them are in universities and medical schools. And not many of the universities and medical schools are in Mill Hill in north London.

Those few facts summarize how the history of the NIMR shapes its current problems – problems of location, of role, and of competition for limited cash with many rivals. Along the way to establishing an institute with notable research successes to its credit, successive directors of the NIMR, and members of the MRC, made decisions which many now regret.

The original NIMR was established in hampstead in the converted North London Hospital for Consumptives, staff moving there in 1920 after war-borne delays. Two years later a need for extra animal space prompted a fateful decision: the council paid £6,000 for a 32-acre farm at Mill Hill.

In the late 1930s there was great enthusiasm for drug research to build on the successes of some of the first important products of scientific medicine like the sulphonamides. There was no room for this work in Hampstead so a new site was sought for the whole institute. Mill Hill was miles from anywhere, but the cost-saving from the site in hand was too great to overlook. A great new building was put up on the old farmland, overlooking the rolling countryside, and the move was made in 1950.

In those days it was a fine place to live and a fine place to do research. The scientific staff expanded very rapidly – too rapidly, some now say – and added important work in immunology and biochemistry to pre-war successes in studies of neurotransmission, hormone action and viruses.

But as time passed the attractions of the NIMR decreased. Facilities in other centres, especially universities, improved in the 1950s, and even more in the 1960s. There was a wider choice for research students looking for a home, and more competition for the top scientists for tenured posts. The last director, Sir Arnold Burgen, who succeeded Sir Peter Medawar at the beginning of the 1970s, inherited a staff of around 800 people which the council wanted to reduce because the institute was taking such a large share of its budget – 11 per cent in 1970. But the expansion of universities was drawing to a close and tenured staff were reluctant to move.

At the same time, university problems in research funding prompted closer scrutiny of the role of research council institutes. Although the MRC was generally held to have a good record on balancing support for university groups and its own establishments, the NIMR was singled out for special criticism in Mr Dick Morris's report on the subject last year for the Advisory Board for the Research Councils. Mr Morris considered the NIMR one of those institutes "where much of the fundamental work could be carried out in a university but which were established for a variety of historical reasons".

Not long before, a special MRC review committee had heard similar arguments. A group set up to consider the institute's future when Sir Arnold retired looked closely at whether it had a future. Several members including Sir David Phillips, now chairman of the ABRC, argued that the council should dispose of Mill Hill, and disperse its numerous research groups between university units and the Clinical Research Centre in Harrow, the council's large, hospital-based establishment.

They felt that there was no way to rescue the institute from physical and intellectual isolation and it was time to put the money to better use. But those arguing for trying again won the day. One of the optimists on the group was Dr Dai Rees, who became the institute's new director.

Dr Rees inherited a laboratory in some ways very well-endowed. There are many productive scientists at Mill Hill; in 1982/83 they published some 600 papers. And they enjoy the services of experienced engineering and technical staff, in-house animal breeding and a splendid library.

But for all that it still presents a curious aspect to the casual visitor. The large central laboratory block doesn't look like anywhere else. What it looks *most* like is one of the large mental hospitals built around the outskirts of London around the turn of the century to keep the patients out of sight of the public. The architecture is more modern, but the tall building with its four lofty wings, the extensive grounds and well-kept drive all suggest a place designed to be self-contained.

Of course no contemporary scientific establishment can be self-contained, and the institute's noticeboards testify to a steady stream of seminars and meetings given by visitors from other MRC units or university departments. Many of the university visitors must still envy the NIMR staff the chance to focus on research uncumbered by teaching or administration. Perhaps that odd twinge of envy adds force to the question which still hangs over the institute, the question Dai Rees has to answer: if the NIMR did not exist, would it be necessary to invent it?

If history has turned the National Institute for Medical Research into a solution looking for a problem, finding the right problem is a crucial task for its new director. Dr Dai Rees, and virtually anyone else you talk to, puts it in terms of defining a role. Everyone knows that the Laboratory of Molecular Biology in Cambridge is the place for very detailed analysis of gene and protein structures. And the Medical Research Council's Clinical Research Centre is for applied research to improve medical, care. Where does the NIMR fit in?

Start with a general idea of what it can do. One strength is the ability to bring large groups together to address different aspects of the same job. And this is becoming more fashionable in biology, Dr Rees finds. "Many of us are noticing that the Americans and now the Japanese can get together resources to throw at a major problem." He cites the recent American effort to identify the virus causing AIDS, and to develop a way of screening blood banks for the virus. "It was important, so the National Institutes of Health got together 50 post-docs just to throw at the problem." He thinks the same sort of approach may fit some more fundamental biological problems.

First, find your problem . . .

These problems are not quite as general as the titles of the four new groupings of the NIMR's 20-odd divisions – genes and cellular controls; infections and immunity; physiological, neural and developmental mechanisms; and management and technology – three for broad areas of science, one for services. One can divide the three up into sub-problems. The scientists working in the general area of genes and cellular controls want to know things like how steroid hormones help turn genes on and off, or how cells decide when to stop growing. How do skin cells growing to heal a wound know when they get to the other side, for instance?

It is still difficult to see the grand themes here, so perhaps the answer lies in common approaches. Dr Rees stresses that the same techniques tend to be used on a great variety of problems. In a place the size of the NIMR it is worth putting a lot of effort into installing new technologies which universities may find too costly.

This alone does not seem enough to give the place an identifiable direction, though. Might Dai Rees's own predilections fashion the overall thrust of the work? "I've always been fascinated by the problem of embryonic development, even though I haven't worked on it. So I'm sympathetic to those who want to move into that area."

That sounded like a problem big enough to fit the bill, but there was an immediate caveat: "I don't believe that I should make the scientific programme of the NIMR in my own image. I've moved out of industry back to basic research because I really do get excited about scientific ideas."

However, he does believe the NIMR's role can be defined in a way which unites these levels. It begins simply – "it's about levels of biological organization from the cell upward". Again there are qualifications, mainly to preempt misunderstanding. Some NIMR researchers took this to mean they would not be allowed to use molecular biological techniques – to splice DNA or sequence a gene. But Dr Rees stresses that the higher-level problems are first formulated in terms of what goes on within cells. "The idea is to explore that in relation to bigger problems which concern interactions between cells."

So the NIMR's programme should now start to cluster more around these questions, questions like how the cells of a developing embryo become specialized for different tasks, or how heart muscle cells all contract in synchrony. While the scientists working at the institute move to fill this role, Dr Rees is also supposed to see that their work is brought into closer contact with industry. But that is another problem.

Under new management

When Dai Rees's appointment at the National Institute for Medical Research was announced, word went round the institute that he was one of the world's aces at preparing artificial deserts. In the slightly defensive, slightly fearful climate created by the questions raised about the laboratories' future, it was the medical scientists' way of telling each other, "he's not one of us".

And it was certainly a radical appointment for the Medical Research Council, which traditionally puts its establishments in the keeping of men of outstanding scientific brilliance. Dr Rees's eminence, in recent years, has been as a manager – worse, for some, an industrial manager. Before the NIMR, he ran a still larger lab, as principal scientist at Unilever's bioscience research division at Colworth. It was an important job, to be sure, but not a natural precursor to one of the two or three key posts in the MRC.

Not that his scientific credentials are poor. He is regarded as an outstanding carbohydrate chemist, and became a fellow of the Royal Society in 1981, when he was 45. While at Unilever, he developed more interest in basic biology, and built up the company's cell biology group. This eventually led to a part-time deputy directorship of the MRC's smaller biophysics unit at Kings College, London. Although he is said to have put detailed plans for the future of the NIMR before the review committee, he says his first reaction to the invitation to become director was great surprise.

He approaches the task of reshaping work at the NIMR "under no illusions that I've reached the level of scientific distinction of my predecessors". He brings instead a conviction that the institute's work can complement research elsewhere, and that it is possible to renew the drive of a large laboratory.

Before Unilever, he was a university teacher, first in Bangor in his native Wales then in Edinburgh. And he sees pros and cons in all these different research environments. Universities offer the freshness and vitality of students, but it is very hard to arrange to do work which is not squeezed in a single discipline. Even 10 years after leaving Edinburgh, it sounds as if he found university life frustrating.

"My own research has always been very mixed up between physical chemistry, biochemistry and biology. So I am myself the sort of person who can thrive in a multidisciplinary research establishment." Now he has to make sure others thrive similarly, aware that judgments will soon be made on the success of the new regime. On the five-year time-scale offered by several influential observers, he has three and a half years left to validate the MRC's choice.

It's nice to be in charge, but a research director won't get very far by giving orders. "I think one of the biggest mistakes you can make in research management is to pull rank in a scientific discussion," he says. He is even unhappy speaking of management in this context, preferring to speak of a research culture.

How to *be* a director fascinates him: "Probably to my scientific detriment, I'm very interested in how you arrange things for a healthy scientific culture." He is certain you cannot promote research by instruction, like telling a plumber to fix a sink. "You can't instruct a scientist to have an idea or a new insight."

But the director needs a general sense of the way things *should* go: "A view whether people are asking about a problem that's important and they're going about it in a good way, that's likely to succeed." If they are, they must be encouraged. If not, they must be encouraged to do something else.

The trick is in stimulating and channelling individual motivation, not writing blueprints for other people's experiments. "There are directors who think it is part of their job to be able to second guess every experimental design," he says. "But I don't presume to operate that way."

He does want to operate by personal contact, which is one of his criteria for the optimum size of a research establishment. "I've often thought that 500 was about right. In Unilever we had labs with over 1,000 people, and it becomes impossible for everyone to know one another. It becomes a different type of organism." He is more interested in an institution large enough to muster a "critical mass" to tackle important problems, but still small enough for collaboration, advice and discussions to happen naturally.

The director then takes part in these discussions, acting as a sort of research critic. Like a literary critic, this is a useful job, but not the heart of the matter – "you have to distinguish good science from bad science, but you shouldn't kid yourself you're having creative thoughts".

Creative or not, Dr Rees will be a rigorous critic. Listen to him talking about the new MRC industrial liaison laboratory soon to be set up in buildings adjoining the NIMR: "Our industry links mustn't compromise the basic role of the place in advancing concepts in basic biomedical science. One lesson I learnt in industry was the dangers of people getting confused over whether they're doing research or development. People are very fond of talking about middle-ground research, bridging the gap between pure and applied. What it really means is they're freed from the pressures of being very good at either."

To help him sustain the pressure to be good at something, Dr Rees is appointing new heads of divisional groupings within the institute, two in post, two on the way. They will be his scientific strategists, "who can feel for the general direction of the £2m slab they're concerned with. – what's good, what's bad". They will be scientific leaders, more in the traditional MRC mould, with the difference that Rees will keep hold of the reins from above. "I'm not interested in abdicating – turning the NIMR into four mini-institutes and then sitting in this office doing nothing – and I don't want to draw more productive scientists into the business of management."

Dai Rees: no illusions

Management, then, or the creation of that research culture, is his responsibility. And carrying out that responsibility at the NIMR, with money tight inside the council and critics waiting outside, must be one of the hardest jobs on the British research scene. I think he is enjoying it so far.

Ernest Boyer

Fraud and integrity in the house of intellect

For several years, warnings have been raised in the United States about the erosion of integrity in higher education. As federal research grants have increased in dollar amounts and become harder to get, as the connexion between the university and the corporate world has tightened, observers have been disturbed by publicized incidents of flagrant dishonesty and abuse. It is no wonder, given the decibel level of the current outcry, that many consider fraud not only a growing problem in research, but also a major problem throughout higher education – a major problem gone out of control.

The chairman of the department of medicine at Stanford University in California resigned last month after the university's committee on ethical scientific performance found him guilty of plagiarizing material from a medical textbook. This professor was censured for "professional misconduct".

A professor of engineering at George Washington University, District of Columbia, retired after he had been charged with using aliases to teach at two colleges in Pennsylvania. And a professor at the College of William and Mary in Virginia was relieved of his duties after he was discovered to be holding a full-time job at a university in New Jersey.

The basic examination that doctors must take before they are allowed to practise medicine has been stolen, reproduced, and sold for prices as high as $50,000 per copy. Incidents like these are part of the mounting evidence of cheating and fraud in medical licensing examinations as well as in the purchasing of medical school transcripts.

Of the 19,000 people who attended foreign medical schools before taking their medical exams, more than 85 per cent – a record proportion – failed the latest series of tests. At least 25,000 Americans entered foreign schools in recent years. Enrolment in these schools is rising at 20 per cent a year. Too many of them are little more than storefront operations. As a result of all this smoke and fire, the credentials of several thousand doctors have lately come under review nationwide.

These headlines, as bad as they seem, must be put in proper context. The number of cases of reported fraud in research remains very small given the exponential growth of science and technology – well over 600,000 scientists and engineers work in the US alone – given the expansion in the number of American colleges and universities – now over 3,000 institutions – and given the fact that the academic community is doing an ever better job of policing itself. The informal networks of review and evaluation, checks and balances, work amazingly well. Apples may go bad, but vigilant scholars are now quick to spot them and, most often, can isolate offenders.

The charge made against errant individuals must also be levied against certain so-called educational institutions. The vaunted diversity in American colleges and universities includes a smattering of diploma mills grinding out bogus degrees for benighted students.

But again, professional associations – for example, the American Medical Association and the American Association of University Professors – are working diligently with their members to correct abuses. The regional accrediting associations as well as national professional accrediting bodies are increasingly active – guiding, reacting, warning, censuring, often without publicity, but with positive effects.

Most Americans prefer that the nation err on the side of freedom and opportunity, even though it means living with the risk of excess, some wrong-doing and deep embarrassment. The alternative, we believe, is infinitely worse – external control, with internal problems compounded by those from outside.

It is best to rely on voluntary monitoring, peer guidance, self-policing. And this is happening. The occupants of the house of intellect are working to put their house in order. Professor Gerald Holton of Harvard put the issue of academic integrity in perspective.

"The suggestion that we find in the writing of some journalists that scientists are on the whole sufficiently blind to issues of integrity to need the spur of externally imposed investigations has redeeming value only in so far as such reactions help to remind scientists of the exalted level of public expectations, and of their own duties to communicate better with the public. But beyond that role, such stories obscure the fact that in our time the conscience of scientists has been developing chiefly not in response to some political outcry and chastisement, but in clashes over conflicting principles among the scientists themselves, aided on occasion by colleagues coopted from departments of philosophy and history of science, the law school, or by diplomatic administrators."

Academic professionals do have an obligation to remember their exalted position in society, and to communicate better with the general citizenry. They should always remember that beyond technical competence is personal integrity. An institution called a college or university is and should be seen as having a moral authority of its own. The university is a special place, a centre of independent thinking, yet it is the place where there must be unquestioned honesty in the search for the truth – no tampering with lab results, no plagiarism, no abuse of civility. And it is reassuring to see universities moving vigorously to correct abuses when they are reported.

A journalist's exaggeration of an academic's breach of trust is a momentary irritant, but the deed that invited that exaggeration is an enduring tragedy. Not only can one person's scholarly or scientific career be ended, but the honest work of many colleagues can be undermined as the credibility of research is tarnished. Scholars, researchers, and teachers claim special privileges in our society. They must never forget that their responsibilities are commensurate with those privileges.

There can be no compromise with fraud. There can be no compromise with integrity. Jaroslav Pelikan of Yale adds the long view to our conclusion. "... In the life of the university and in the training of future scholars – community of labour, community of trust, but also community of integrity – is indispensable ... If indeed research and teaching are inseparable, then no less inseparable are academic freedom and academic responsibility in protecting the integrity of scholarly research, not only by vigilance for the present generation but by moral commitment for the generations still to come."

A question of attitudes

John Fernandes: Hendon lecturer

David Jobbins looks at efforts by Natfhe to tackle racism in Britain's colleges

A two-pronged approach to stamping out racism in Britain's colleges has been devised by the college lecturers' union.

November's national council of the National Association of Teachers in Further and Higher Education will consider the response of the union's 800 branches to a draft policy which aims at tackling racism both through the curriculum and through the union's negotiating machinery with the local authority employers.

But the proposals have already been dismissed as inadequate and counter-productive by the black activists and their supporters who have fought to put anti-racism firmly on Natfhe's political agenda.

There are two starting points for the debate within the union; firstly an acceptance that there is racial injustice within the further and higher education system, and secondly agreement by the overwhelming majority of the union's 75,000 members that it should be eradicated.

It is difficult to say how many of Natfhe's members are themselves black – the union has only recently begun to record the information. At its annual conference there may be three or four attending as delegates out of some 450. But it would be surprising if the proportion of the membership at large was substantially greater.

The polytechnics and colleges where Natfhe's members teach are far more cosmopolitan. In higher education, large numbers of overseas students are black, while the further education colleges, especially with the introduction of the Youth Training Scheme, take increasing numbers from Britain's own ethnic minorities.

Natfhe's discussion document says: "Colleges as social institutions are not immune from but are subject to institutional racism. This may be defined as the discriminatory effects which flow from the rules and procedures of institutions. Such rules and procedures were not necessarily designed to discriminate but may militate against the achievement of genuine equal opportunity."

According to the draft, then, Natfhe believes that the major problem is not direct discrimination, but a system which perpetuates a status quo which has in the past been established by the white majority.

"Institutional arrangements not specifically designed to facilitate racial justice may implicate teachers and others in the system's discriminatory effects despite genuine goodwill on the part of all," the paper says.

Even Natfhe's harshest critics among black activists – and the Hendon police cadet school affair has undoubtedly increased their number – would be hard put to deny the union's commitment on paper to tackling the issue. The debate, heightened by the row over the union's treatment of the lecturer at the centre of the Hendon affair, Mr John Fernandes, is about the methods of doing so.

Since 1976 Natfhe has been committed to promoting a multicultural approach to further education and it is this approach which is under pressure from Fernandes' supporters and others in the union. At the 1983 conference there was a heated debate over whether to give the multicultural approach second place to uncompromising anti-racist teaching.

Mr Don Kirkley told the conference that multiculturalism saw black people as the problem and not how a white society reacted to them. And Mr P. S. Jariwala added that it was "grossly misconceived" to believe that racism could be ended by teaching children about the customs of minority cultures.

But the conference voted in favour of a dual response compromise which recognized the distinction between multiculturalism and anti-racist teaching but left them as equal partners in the battle.

The discussion paper is the result of the compromise. It admits that multiculturalism – based on the premise that if prejudice is the result of ignorance, remove the ignorance and the prejudice miraculously disappears – had not succeeded in breaking the patterns of racial injustice that pervade the FE system.

Curriculum-led information does not of itself confront racial prejudice nor institutional discrimination. "We therefore believe it is now urgently necessary to complement this approach with an anti-racist orientation to tackle directly the discriminatory effect of the system's structure while continuing to challenge racism within the taught curriculum. But as Mr Jariwala said during the conference debate: "Time is running out."

Racism awareness training for staff is recommended as a valuable tool in the task of dismantling institutional blocks to equal opportunity, while individual teachers should have the opportunity to examine and develop their own attitudes to race and racism.

An anti-racist curriculum was vital, with new courses for students who intend to work with the public, in whatever job or career, receiving racism awareness training, anti-racist and multicultural teaching with the aim of "engendering positive attitudes towards their future role in the development of a society based on racial justice".

The development of multiracial or anti-racist policies within colleges is welcome but not enough, the union says, with much depending on the attitudes, skills and support of individual teachers. "Clearly no teacher should behave in a racist way or connive with any form of racial discrimination," it says.

This lofty view will inevitably lead to difficulties over interpretation. Was the South London college principal who refused permission for Anti-Nazi League posters to be displayed in a college where there had been a number of racially-motivated attacks on black students by white students "conniving" at racism, for example?

In a draft "code of practice" for individual Natfhe members, the paper suggests: "No member should express racist views, exhibit racial intolerance or racist behaviour, knowingly practice or connive with any form of racial discrimination in the course of his/her work or trade union activity."

Guidance is given to branches and liaison committees on how to guide colleges and local authorities towards approaches in line with the union's policies and recommends that whether or not a college is in a multiracial area there should be regular staff conference on the issues.

A summary of equal opportunities and anti-racist policies adopted by branches, colleges and local education authorities is to be published in the union's annual report.

Education's pivotal role in the fight against racism is recognized in the document, with Natfhe's obligation to ensure there is no overt or covert racism or discrimination within its own organization, structure and rules, in relations between its members, in custom and practice at the workplace and in employment opportunities.

This commitment is regarded with considerable scepticism by Fernandes' supporters. In a pamphlet containing an assessment of the case published by the National Convention of Black Teachers, the union leadership is accused of hypocrisy. "In the traditional so many British trade union bureaucracies the Natfhe leadership was able to claim that fighting racism was divisive for the working class."

That they are isolated in this view is further evidence in their book of Natfhe's own institutionalized racism with the union leadership and most of the left united in fighting for multiculturalism while regarding anti-racism as expressed by Fernandes as "counter-productive".

Police training provided the flash point for Natfhe's own internal debate on how to tackle racism – and the union earlier this summer drew up its own proposals for the development of this critical area. They lay greater emphasis on racism awareness training designed to bring individuals to terms with the cultural climate in which they live.

"Rather than centring on the conscious racism manifested in its extreme form by groups like the National Front, it requires even those who are intellectually committed to an anti-racist position to explore their own ingrained feelings and discover whether these unconsciously influence their attitude towards the people of other races," the proposals say.

But the response in the Black Teachers' pamphlet is dismissive. "One of the effects of the multicultural/racism awareness package is to divert the attention on and sympathy of liberal whites from black people's struggles against the racism of the British state and society.

"Multiculturalism/racism awareness effectively defines and delineates white people's view of a relationship with blacks, making them 'understandable' and 'knowable' only through the stereotypes of multiculturalism on the one hand, and often paralysing self-centred obsession with one's own hang-ups on the other."

According to the Black Teachers, multiculturalism's fault lies in regarding races not as part of a class hierarchy but as a component in a model of society with groups of equal status competing in a pluralist society.

Natfhe believes that it is impossible to load a substantive part of race training into initial training, but feels it is better placed six months into probationer training, when recruits have had some real experience but before unacceptable attitudes have taken hold.

And it is anxious that it should not be regarded as a "different" aspect of training. "The underlying assumption must be a positive attitude to Britain as a multiracial/multicultural society, and every effort made to dispel the notion of police/community relations as necessarily problematic," the recommendations say.

And there is a warning against exploitation of black officers as a teaching resource. Where they are used it should be on a completely voluntary basis and their experience should not be assumed to be universally applicable. "To stereotype from the particular to the general is no more valid than to stereotype from the general to the particular."

As a bitter and personalized chapter in Natfhe's brief history, the Fernandes affair is effectively over. The last conference cleared the union executive of any blame for the way the case was handled, and Fernandes' battle to inject a powerful dose of anti-racism into the Metropolitan Police's multicultural training programme has been lost.

But the case has been a piece of on-the-job awareness training in itself – and no doubt that either the 1983 conference debate or the draft policy it has produced would have been quite so sophisticated in their arguments if it had not.

A lecturer's immediate career may be a heavy price to pay – but Natfhe may find it has to reconcile its internal contradictions and the wider ones within the further education system more rapidly as a result. It may be tough but an early solution is infinitely to be preferred to no solution at all.

Police, Racism and Union Collusion – the John Fernandes Case, published by the National Convention of Black Teachers.

A moral tale

In the first of two articles John Passmore discusses academic freedom and moral responsibility

Special privileges and special moral responsibilities are often interwoven. Marriage, parenthood are two obvious examples. A doctor has special privileges in relation to the prescribing of drugs, the cutting up of bodies, intrusions into what are ordinarily privacies. The Hippocratic Oath already recognized that fact and imposed consequential special moral responsibilities on doctors. What about academics?

The world at large thinks of them as being privileged. So they are, in a very important respect. They have much more freedom than the ordinary employee, even the ordinary teacher or the ordinary research worker. I do not particularly have in mind what is generally, in Anglo-American communities, called "academic freedom". The freedom to express one's views is, in a democratic society, a general right – not an academic privilege.

To be sure there are peculiarities, distinctive moral restraints, in the academic case. These derive from the fact that academics are dedicated to a particular form of life, to critical inquiry and the communication both of the spirit of inquiry and the knowledge which has been acquired under its guidance. Unlike politicians, unlike lawyers, they therefore have a moral responsibility, whenever they are concerned with controversial material, to present their own and the opposing case fairly.

They ought not to conceal the fact that what they are saying is indeed controversial, they ought not to recommend only that reading which either advocates their own opinions or states the position of their opponents in its crudest form, they ought not to try to browbeat their critics. Such responsibilities, however, derive from their way of life rather than from any special privileges the possess.

Their privileges, at least in a democratic society in which freedom of speech is a general right, flow rather from their exceptional freedom to decide what they will teach – their "academic freedom" in the traditional German sense of the phrase – what research they will undertake, how they will distribute their time, how they will grade their pupils, whom they will have as their colleagues.

Such freedoms, admittedly, are far from being either universal or absolute. In some universities junior academics may possess them only to a very limited degree, or scarcely at all. They are often in some measure restricted by lay councils or by boards of trustees or by direct government intervention.

The movement in recent years, furthermore, has been towards confining their range. In part, this reflects a wider tendency, even on the part of those who proclaim that they are defenders of liberty, to downgrade its importance whether in the name of "social justice" or "accountability". But one also has to confess that the morally irresponsible exercise of liberties has often facilitated, and superficially justified, such attacks on academic privileges.

Take first the decision what courses to offer and what their content shall be. The view that this is a matter for academics to determine has in the last two decades come under attack from two very different quarters but with very similar effects.

There were the radical students. They often had a good case, given that many university courses were extraordinarily dreary, never revised, in the worst cases delivered by lecturers from the notes of their predecessors. In so far as student attacks shook their teachers out of their lethargy, compelled them to ask themselves such questions as whether they had been taking their teaching seriously, why they were teaching what they were teaching, whether they had been systematically revising in the light of new work, it recalled them to their moral responsibility as teachers. The response, however, was often panic-stricken rather than academic – not surprisingly, given the violence of those times and the demagogic attitudes of so many university teachers themselves.

Teachers sought to pacify their students, to keep their numbers constant or to provide themselves with a forum by offering courses which were intellectually empty but catered to catchery demands for "relevance". The degree to which this could be done varied, of course, from subject to subject. Physics courses could be made easier in order to attract more students, just as in the past they were sometimes made harder in order to satisfy, at whatever cost to the students, the vanity of teachers in quest of a reputation for "having high standards!" But a physics course which substituted "physics in the kitchen" or "the social responsibility of physicists" for the standard courses in physics would quite obviously be falling down on its job.

In such more amorphous subjects as English or philosophy the situation is rather different. To take a real case might be embarrassing. So let us be content with a fictional, and one hopes exaggerated, example – Professor Gold in Joseph Heller's novel *Good as Gold*. Professor Gold has made a great name for himself, at least in his own English department, by thinking up courses that would attract students from other departments, courses with such titles as "Blake, Spinoza and Contemporary American Pornography", or "Dante, Hellfire and Faulkner". A student could graduate in English, as Heller describes the situation, after spending all four years of his academic study watching foreign films in a darkened room.

There always have been appalling courses in universities. But in each such case the proper ground of complaint is the same. The student is not being introduced to what is central in his subject, to its central themes, its fundamental disciplines. So, similarly, philosophy courses which do no more than turn out technicians and philosophy courses which teach "applied philosophy" to undergraduates who have never mastered philosophical techniques or rigorously considered the classical problems of philosophy are equally at fault.

Whether in English, philosophy or any other amorphous subject, there can, of course, be intellectually respectable disputes about what writers are central, what techniques necessary, how best to introduce the subject. That does not justify the setting up of courses which leave the undergraduate unable to read the classics of English or philosophy or sociology or politics with any more understanding than the untrained reader. The moral responsibility in such instances is to stand up against pressure, whether it comes from students, from fashions, or from governments.

This is a responsibility which is nowadays only too easy to set aside when the consequence may be a decline in student numbers and with it a loss of staff or opportunities for promotion. It seems harsh under such circumstances to insist that unless academics remain faithful to their subjects, our intellectual life is as much under threat as it is in a totalitarian regime. Burning books is only in degree worse than helping to create a situation in which no one either wants to, or is capable of, reading them.

In respect to choosing research topics, the moral responsibility is no less. One can draw a rough distinction between "factitious" and "enthusiastic" research, although one, over time, sometimes turns into the other. Factitious research is undertaken, at least in the first place, only for the sake of adding to a publication list or securing promotion or adding to one's income; enthusiastic research arises out of the fact that one becomes seized by a problem, to the solution of which one believes one can contribute.

In each case the researcher is obviously called upon to work carefully, conscientiously, to acknowledge sources and so. But the factitious researcher is subject to a special temptation: to choose a trivial topic only because it can be coped with by familiar methods. The result is a phenomenon with which we are now all too familiar, the clogging of channels of communication by articles, books, which need never have been written and will never be read.

Research inflation is often set aside as no more than a minor inconvenience. That, I think, is an underestimation. Such research takes time and energy which academics would do better to devote to reading, to improving their teaching, to discussion and general conversation. It increases the risk that good but unorthodox work will be wholly ignored, especially when it comes from a young academic in a little known university.

Once again the temptations are considerable; appointment, promotion can depend on the completion of research. It is *safer* to undertake it, even when one has no enthusiasm for doing so, safer still to choose easily manageable topics proceeding along conventional lines to a definite conclusion – of however little interest, whether theoretical or practical. The moral responsibility is nevertheless plain: the freedom university teachers have to choose their line of research carries with it an obligation not to use research simply as an avenue to personal advancement. This obligation, however, is likely to be ignored as long as universities make use of their present appointment, tenure and promotion policies.

The temptations of the enthusiastic researcher are rather different. Enthusiasm is always liable to degenerate into fanaticism. Academics then come to be convinced that nothing matters except the completion of their research, that everything and everybody else can, and ought to, be sacrificed to it. So they are led to ignore their responsibilities towards their students and their university; they use graduate students, their colleagues, the university itself as mere instruments, as if *their* interests were of no consequence. They will misrepresent the nature of their research, its final costs, its likely outcome, in order to secure funds for it. (Adventitious researchers sometimes behave in a similar fashion, with much less excuse.)

One scarcely needs to underline the judgment that such behaviour is a gross misuse of privileges. Enthusiastic researchers are central to the contemporary idea of the university. Just for that reason they have a special responsibility to preserve the now often tainted reputation of research as a genuinely cooperative enterprise, candid about what it is doing and never overstepping – another temptation of enthusiasm grown fanatical – the moral constraints which relate to the treatment of human beings and animals. Only the university can do this, now that research is so often conducted in industrial or defence establishments.

To turn now to grading. The academic's freedom to grade is sometimes limited by the intervention of external examiners. But let us assume that, as is often the case, it is largely, or totally, unconfined. Very obviously, that freedom is granted on the assumption that academics will deal fairly with those they are examining, will not take bribes, financial or sexual, will think carefully about the nature of the examination papers, will read the scripts closely and so on.

Why take grading so seriously? Simply because it is the outer sign of the teacher's judgment of their students in respect to their achievement in a particular course. Examiners are not grading candidates as persons, not trying to estimate their general intelligence. Their objective, by the nature of the case, is much more limited: to supply, as fairly and accurately as they can, a specific piece of information which will then be taken into account, along with other pieces of information, in determining the suitability of the candidate for admission to further studies or to a particular kind of appointment.

The view that there is something immoral about making such determinations can fairly be set aside as preposterous – although like most preposterous doctrines it has recently had its devotees. Athletes, singers, university teachers, employees in any organization have to be discriminated among. There is no reason why students should be exempt or why teachers should no longer be called upon to give messages to the world around them about the kind of work their students have completed for them – not necessarily, of course, in a single examination.

A high moral tone about grading often serves as a disguise for what are in fact interested motives. Grade inflation makes life easier for academics who no longer have to take care, to make what are often difficult decisions in their discriminatory judgments, it means that they are less likely to be troubled by the appeal mechanisms which are now prevalent, it may attract more students to their classes. Soft options are not, of course, a new invention but they were once largely confined to peripheral subjects. A more general grade inflation, especially at the upper end of the scale, is a clear abdication of moral responsibility.

The cherished privilege of selecting one's colleagues has been generally recognized to carry with it particular moral responsibilities. That there are special temptations at this point is also recognized; in many universities they are carefully guarded against institutional devices. To reject or prefer a candidate simply on the grounds of his or her sex, race, nationality, social origin, religion, political views, came to be generally regarded as inadmissible. Now, however, it is sometimes argued that such factors as these should be regarded as justifying appointments whenever candidates of this type have previously been discriminated against. This has the obvious effect that candidates are now sometimes discriminated against on the grounds of their sex, race, nationality or what have you. Indeed the older principle – I have elsewhere called it the principle of civil justice – that the academic privilege of selecting colleagues ought to be matched by a responsibility to select the candidate best suited to the position is now more and more under threat, whether from old-fashioned nationalism or from new-fashioned reverse discrimination, both of them sometimes forced upon the universities by governmental regulation. Here the duty of academics, in my view, is to resist. But they often find life more comfortable, and are sometimes personally advantaged, if they succumb.

In such cases, however, the moral issues are at least disputable. What is worst of all is for academics to select colleagues not because they can make a real contribution to their work of the department, whether to its teaching or to its research, but because they are "nice chaps", easy to get on with, not upsetting the rest of the department by their abilities, their unorthodoxy or their enthusiasm.

If one discusses with a member of the German government the propriety of allowing the Ministry of Education the right to make the final decision about professorial appointments, his reply will often be that many of what are universally regarded as the greatest of German professors were appointed against the wishes of a university which would have preferred to elect a "safer" mediocrity. Here the moral responsibility of academics is most evident and the temptation to prefer candidates for non-academic reasons at its strongest. Of course, if particular candidates are known to be morally unscrupulous this can properly count against them).

Our story is by no means complete. In particular, there are many problems arising out of the fact that academics normally have an exceptional degree of liberty in apportioning their time – both between teaching, research, administration and, more generally, between their private life, their university life, their public life. Their moral responsibilities, in those cases where such decisions lie in their hands, will naturally vary from case to case. In at least one European country regulations now lay it down that the academic is to work 40 hours a week, a third of this time on teaching, a third on administration, a third on research.

Any such regulation is totally absurd. Talents differ greatly. Some academics will do best to make teaching central, some research, some administration. Not, however, to a degree which involves the total neglect of other functions which a University calls upon the academic to exercise. If such regulations flow in large part from the spirit of our age, with its spurious egalitarianism, its determination to make all institutions conform to bureaucratic norms, their framers can sometimes, I fear, point in justification to academics who do not recognize that privileges and responsibilities go together.

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Getting over the publication obstacle course

As a visiting professor in the USA, admittedly with a good BA degree, but lacking a doctorate and (as is customary at Oxford) having done no work whatsoever for my MA, I was asked whether I had published any books, or articles in "learned" (sometimes "scholarly") journals. Adding up the books wasn't so bad; trying to remember and compute the articles took longer but I managed to reach a total of 47. I doubt if this is a record, but it may establish my credentials. It did then, certainly. The question is, should it have done?

Perhaps it's a sort of assault course to test stamina, or ambition, or a tendency to compulsive writing (I admit to the last). First you find your journal; then you check for its approved format – particularly for footnotes and scholarly references; then you type out three or four copies; add an abstract and (sometimes) "Twelve Key Words"; pack it up in an envelope and, if you can still afford the postage, send it off with stamps for return. I have no secretary and the process of preparation and despatch takes three times as long as actually writing the article.

Some journals are "referenced". This means that you delete your name at the top and the editor sends it to (say) three referees. The chances of all three giving it a clear run are minimal, and time consumed in trying to adjust it to meet even generally favourable criticisms is considerable. (I have an article on Thucydides coming out which has taken *four years* from door to door.) Even the supposed anonymity is usually impossible: "As I have pointed out elsewhere (Wilson, 1980) . . . " gives the game away pretty comprehensively and most established authors have distinctive styles and interests.

Such obsessiveness is not quite universal. Very occasionally an editor will simply say "I liked your article on squiggleology and will print it in June". But these breaths of fresh air are rare. Increasingly bureaucratic standards prevail and the trappings of scholarship grow heavier. Were Plato, or Rousseau, or J. S. Mill, or Matthew Arnold to submit something to a contemporary educational journal, it would fall at the first hurdle.

Of course, much of this is done with the best intentions, avoiding personal prejudice, preserving standards, and so on. But we ought to consider whether it is the best way to encourage rising scholars. (I myself am not desperate to rise; if three anonymous referees don't like what I say, particularly if their criticisms are mutually contradictory, I'm afraid I lose interest and shelve the whole thing.) In my own field, philosophy, a lot of the apparatus is absurd. "Twelve Key Words" for an article on ethics?: "good", "values", "education", "Peters", "theory", "right", "wrong", "bad", "Peters", "moral", "teach", "virtue". In education it's even worse: lacking academic respectability in its own right, obsessed with the latest fashion and the need for at least an appearance of scholarship, it forces young contributors to be deferential towards the whole apparatus and becomes an exercise in cunning and public relations.

As a (very junior) editor of a Learned Journal, and someone who has sometimes to adjudicate articles written by candidates for appointments, I prefer to ask quite different questions. Is it clear? Is it jargon-free? (Almost everyone in education fails this test). Is it verbose? Is it doctrinaire ideological? Does it shed new light on something important? These criteria – and we all pay lip-service to them – can all be met and often easily all to be met without the need for hefty quotation, footnotes and the rest. The old joke-footnote, "God: qv Genesis I, 1" comes near the truth. As to quotations that bury banality beneath mounds of apparatus: "As Snigsbee and Finkelstein (1967, 1978a) have proved, life is uncertain"; "According to Janacek and Hummel (1982), people who like each other tend to get on better."

I am not optimistic about the future because the only alternative to this apparatus is to identify a comparatively small number of highly intelligent people and trust them with the power to run things their own way, which of course is open to a broadside of charges: anti-democratic, non-participatory, elitist.

In some "pure" academic subjects this still happens; in most fields, education preeminently, it is, to say the least, not clear that we can even identify the people to trust, so that the whole thing becomes a matter of elaborate consensus and large-scale participation. Of course, the "club" model which used to prevail in much of British academic and other life has its dangers. But the existing practice may be worse.

John Wilson

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Oxbridge and the comprehensive

J. E. Archer asks what part the comprehensive school has to play in admissions

The place of the Universities of Oxford and Cambridge within the social and educational structure of society has never been so fiercely discussed and debated as during the past decade. In an era which has seen the expansion of the comprehensive system of education there is a need to ask what part does the comprehensive school play with regard to admissions into Oxford and Cambridge.

The admittance of comprehensive students into Oxbridge appears to be an issue of some passion. Robbins in 1963 called for a greater equality of opportunity to enter Oxford and Cambridge, the Franks report in 1966 doubted whether the present methods of selection were justified on educational grounds. The Dover committee in 1983 sought to achieve two aims – "to arrive at a simplified procedure" and "must be fair and seen to be fair". The call for reform of admission procedures suggests that there is some unrest over equal opportunities for all, or Oxbridge tutors are concerned over the lack of quality of applications and the narrowness of their choice of intake.

A recent stay at Cambridge gave the opportunity to carry out some research into the admittance and progress of comprehensive students at Oxbridge. Help was given by admission tutors from colleges of both universities and also from colleagues by means of a questionnaire sent to 300 heads of schools of the Secondary Heads Association.

A study of the applications and acceptances to Oxford and Cambridge from the 1977 entry to 1983 shows an ever increasing demand for places from students from comprehensive schools.

An analysis of the statistics show that the number of comprehensive students applying to Oxford has doubled over the seven year span of 1976 to 1982. The number of applications rose from 1,154 to 2,366, increasing their percentage of the total applications from 18 per cent to 31 per cent. With sixth form colleges making 9 per cent of the total applications the remainder of 17 per cent for the maintained sector for October entry 1983 must have been received mainly from grammar schools.

The increase in the number of applications from maintained schools (including comprehensive schools) is continued at Cambridge with a rise of 2 per cent in 1983 compared with 1977 (7 per cent at Oxford). The fall in the percentage of total applications from independent schools is confirmed by both universities. At Oxford the percentage fell from 45 per cent to 38 per cent and at Cambridge from 41 per cent to 36 per cent. Both these latter percentages show the decline of the direct grant school since 1981.

When reviewing the number of acceptances it will be seen that both Oxford and Cambridge in 1983 had accepted a higher proportion of students from the maintained than the independent sector. Oxford 50 per cent to 47 per cent, and Cambridge 48 per cent to 46 per cent. This was the first year that Cambridge had produced this balance towards the maintained schools although Oxford's intake has shown such a pattern since the 1981 entry (49 per cent to 47 per cent).

The maintained schools have slightly increased their percentage of total acceptances from 1977 to 1983 both at Oxford and Cambridge as the independent sector showed a slight decline. The rise in percentage of total acceptances for comprehensive students for Oxford has continued from 37 per cent in 1977 to 24 per cent in 1983.

There has been a large increase in the number of applications from maintained schools to Oxford and Cambridge over the past seven years. A much greater number showing preference for Oxford while the number from the independent sector shows only a marginal change. The contrast between the two sectors of education is more marked when comparing their percentage of success rate, namely the number of acceptances from applications of each category of school.

The increase in numbers applying to Oxford is not constant with the percentage of success rate; namely more students are applying but a lower percentage are being accepted. There is a fall of 11 per cent for maintained schools (including comprehensive) and a fall of 13 per cent when comprehensive schools are being considered on their own. There is a fall of 8 per cent for the independent sector. The position is more stable at Cambridge but there is a wide imbalance percentage of success between maintained schools and independents (14 per cent at Cambridge, 11 per cent at Oxford). As the majority of independent students seek entry through the seventh term examination this may account for their apparent higher rate of success and the call for reform of the imbalance. The development of the sixth form college is in evidence from the Oxford statistics with a percentage success rate of 34.

It is unfortunate that the statistics of applications and acceptances issued by Cambridge do not give a breakdown of the maintained school sector. It would be of great interest to trace the impact of the comprehensive and sixth form college movement on admissions procedures. The discussion on reform centres around this theme but there is little evidence available for analysis.

The mode of entry into Oxbridge has revolved around the fourth or seventh term examination. The Dover committee's recommendations have now been accepted by Oxford and will come into operation this year. Cambridge still debate the issue and are under pressure from Emmanuel, Fitzwilliam and others to base their entries on the conditional offer mode of entry. Cambridge has by tradition accepted more entrants through the conditional offer system than Oxford. In October 1983, 864 were made (536 men, 328 women) and 545 (349 men, 196 women) actually admitted which represented 19 per cent of total acceptances. Oxford in the same year received a similar number of applications for conditional offers – 829 but only 220 offers were made. Applicants from maintained schools (including comprehensives) tend to favour the conditional offer route thus avoiding the entrance examination in the fourth term and this is confirmed by Cambridge who show that of the 545 acceptances for 1983, 78 per cent (425) were from state schools, 19 per cent (102) independent and 3 per cent (18) others and overseas. This factor may be due to the large number of applicants to read natural sciences and mathematics, for tutors in these faculties at Cambridge tend to favour the conditional offer approach.

The reversion to an entrance procedure based solely on A level grades, intensive interviews and headteachers report would be viewed with mixed feelings by comprehensive schools. The offer of high A and S level grades across three subjects could prove to be overwhelming and too much a burden to carry through to A level. With the loss of CEE the role of the interview would become more crucial. Will the applicant from the comprehensive school perform well in an intensive interview situation with instant tests and oral examinations?

The change to many observers is that a reliance on high GCE grades could produce a more elitist intake than any of the modes of entry now in operation. A compromise being considered by Cambridge is to retain some form of qualifying examination at towards the end of the Lent Term based on a S level style, and there is much support for this suggestion. For schools the timing would be appropriate with the examination coming at the end of the normal sixth form course and avoiding the disruption of the fourth term.

A review of the academic results of comprehensive students at Oxbridge taken for the 1979 intake and 1982 graduation will confirm to some extent the Oxford findings of Tanner and Tunner published in *The THES* "Classes and Class" April 29, 1983. The Cambridge Tripos II results for 1982 based on the 1979 intake confirm the pattern for graduates from maintained schools to achieve better degree results than those from the independent sector.

The discrepancy between women graduates from maintained and those from independent schools shown in the Oxford analysis is not repeated in the Cambridge figures. Both men and women graduates from the state sector at Cambridge achieved overall better degree results than those from other types of schools. The label of "maintained" is broad based and comprises undergraduates from grammar, comprehensive, sixth form colleges and colleges of further education.

The difficulty remains of trying to identify the progress of the student from the comprehensive school. A close analysis of the 1980 and 1982 degree awards from three Cambridge and two Oxford colleges gave an insight into possible trends. The sample, limited in its scope, does show how the maintained sector graduates do better than those in the independent sector with regard to first class degree awards. But also for the first time, a success rate of graduates from comprehensive schools is available for comparison with those from other categories of schools.

The sample showed that in 1980, the five colleges obtained 62 first class degrees with 15 being achieved by comprehensive graduates within the total for maintained schools of 36 (26 total for independent sector). In 1982, the number of comprehensive successes were 26 from a maintained total of 38 (21 for independent sector).

More research is called for into the academic progress of comprehensive students at Oxbridge but within the survey there are strong indications that they score well and as the comprehensive numbers continue to increase within the maintained sector intake their impact will become more dominant.

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Applications and Acceptances at Oxford and Cambridge 1977 and 1983

YEAR	CATEGORY OF SCHOOL	No of Applications	Percentage of Total App	No of Acceptances	Percentage of Total Accep	Percentage Success Rate of Accep/App
OXFORD						
1977 Entry	Maintained	3150	50	1315	47	42
	Comprehensive	1154	18	486	17	41
	Indep/D Grant	2837	45	1420	50	50
1983 Entry	Maintained	4365	57	1338	50	31
	Comprehensive	2366	31	555	24	28
	6th Form College	727	9	248	9	34
	Independents	2980	38	1265	47	42
CAMBRIDGE						
1977 Entry	Maintained	3977	53	1373	45	34
	Indep/D Grant	3080	41	1554	51	50
1983 Entry	Maintained	4208	55	1401	48	33
	Independents	2806	36	1332	46	47

***Figures shown for comprehensive and/or sixth form colleges are included in the total for maintained.
Direct grant schools have been included in the total for Independents.
All percentages have been rounded off to the nearest whole number.
Cambridge does not give separate details of comprehensive intake and these schools are contained in the maintained total.
Tables are totals for men and women combined.**

Percentage of Success

OXFORD	Maintained	Comp	6th Form College	Independent
1977	42	41		50
1983	31	28	34	42
CAMBRIDGE				
1977	34	–		50
1983	33	–		47

Oxford Analysis of Final Degree Awards 1982

		No 395			
CLASS I	MEN	12.4% Ind	17.6% Voint		All 2.8%
	WOMEN	11.5% Ind	7.6% Maint		

Cambridge Tripos II Results for 1982

		CLASS I	CLASS 2.1	Total of Category
MEN	Maintained	16.8%	39.9%	739
	Direct Grant	15.8%	37.2%	336
	Independent	12.4%	36.8%	704
WOMEN	Maintained	8.8%	49.2%	329
	Direct Grant	8.4%	53.2%	154
	Independent	4.4%	46.8%	159

The past in the present and future

Roderick Floud considers the use of computers in the study of history

Historians as a profession have been remarkably slow to learn to use computers. It is now nearly 25 years since computers were first used in historical research, and 15 since the great French historian, Emmanuel le Roy Ladurie, predicted that by the 1980s "the historian will be a programmer or he will be nothing". How wrong he was.

There are now signs of change. Early this year several hundred schoolteachers gathered in London to hear about the use of microcomputers in history teaching. All over the country, groups of children are using the computer in history classes; they study their community in 1851 from census data, simulate the first months of the First World War or design canal networks of the Industrial Revolution.

Some of these uses of computers can be criticized as merely the playing of games, but in fact children are learning to use historical information, to manipulate and assimilate it, to carry out in microcosm the tasks of a historical researcher. For them, as for the researcher in polytechnic or university, the computer can be used to escape from some of the drudgery which is an inevitable part of historical inquiry. This drudgery, and the potential of the computer, arises from the sheer volume of historical information which exists in libraries and record offices and which simply cannot be understood and organized into coherence by conventional means. The Public Record Office, for example, holds well over 60 shelf-miles of records and individual classes of records contain information about millions of people.

The reluctance of historians to use computers is normally put down to three factors. First, historians are members of a cautious and conservative profession, in which methodological innovation is not valued for itself, as it is in other fields, but regarded as suspicious or even dangerous. Second, historians have not traditionally used much equipment; they are horrified by the apparent complexity of computing methods. Third, many of the computing projects which have been undertaken by historians have proved to be enormously expensive by the standards of most arts subjects.

These concerns lie behind such pleas as that of Lawrence Stone for the "revival of narrative" in history or for a renewed concentration of historians on high politics, a turning away from social and economic history and the methods and subjects of the social sciences. Meanwhile, from the left, comes the rejection of computing and the use of numbers as a distortion of historical reality and the experience of the common people.

Both groups of critics allege that quantitative history produces uninteresting answers to unimportant questions – although it is odd, if so, that such enormous controversy has been stimulated by the results of quantitative projects such as that by Fogel and Engerman on the *Time on the Cross* – the economics of American negro slavery – or the recent creation of *The Population History of England* by Wrigley and Schofield.

Whatever the quality of the answers, it is certainly true that historical computing takes a long time; several major projects have taken 10 years or more to complete. Mistakes have certainly been made, but the major problem – unappreciated by most critics – has been that historians have been extremely ambitious and, often in ignorance, have made demands which computers and programmers have been hard pressed to fulfil. Historians like to use lots of data; where medical researchers study tens or dozens of patients, social scientists take a survey of 100 or 1,000 respondents, literary scholars analyse a few hundred thousand words, historians think of millions of words about hundreds of thousands of people.

Wrigley and Schofield, for example, based their work on the records of 400 parishes, but their monthly totals of baptisms, marriages and burials in each gave them a data set of 3.7 million numbers. Michael Anderson, in gathering a sample of the 1851 census, has recorded information about 400,000 people. Alan MacFarlane, collecting information about one Essex village, put into computer files documents which contained about 10 million words.

Moreover, historians want to do very complex things with their data. Much social and demographic history is now concerned with "linkage"; historians are frustrated by the fact that information on one person or place is scattered among many documents, each of which gives only a partial view. They see the potential of the computer to link this historical material together, just in the same way as computers might be used today, were it not for data protection laws, to link our credit rating with our tax return or criminal record.

Linkage on the basis of inadequate information has conceptual and practical problems and to do it for thousands of people, as historians want to do, taxes the capacity of even the largest computer; lengthy programs grapple with vast and complex data sets. At the worst, historians retire, bitter and defeated; at best, they spend a lot of time and money. Either way, they may feel that they have contributed as much to the development and testing of computer systems as to historical knowledge.

However, as computer use becomes commonplace, these difficulties are rapidly diminishing and computers are used for small projects as well as for large. There are, also, unexpected benefits from the historian's use of a computer. Historians waste a great deal of knowledge and experience; they read in archives for years, take copious notes and publish one article after many years' work. Rarely, if ever, do they deposit their notes for others to use, and the request by a critic to see them would be treated with horror. By contrast, much historical controversy about quantitative projects has been possible only because the computer tapes have been made freely available, to critics and to friends, and have been kept in data archives. Since it is now common for historical documents to be copied exactly, in words not figures, directly on to computer tape, an archive for the future is now being built up.

The children who laboriously type on to the school micro the census of their village in 1851 are thus at one end of a spectrum of data collection and analysis which is the essence of historical computing. The methods of analysis are often borrowed from the other social sciences; few statistical techniques, for example, have been developed especially to meet the needs of historians. By contrast and often in ignorance, historians have been contending with problems of database management and file structures which lie at the heart of the development of information technology.

Because of this, it is likely that many of the difficulties which have plagued historical computing in the past will soon disappear, as the needs of historians merge with those of commerce, industry and government. At the same time, generations of children trained to use computers in the learning of history will move from schools into higher education, anxious to use their skills. Demand and supply will be there, it will be interesting to see how historians respond.

Growing pains

MARY EVANS PICTURE LIBRARY

London "street Arabs" of the early nineteenth century. Marine Society records show that the slum children were an average eight inches shorter than their upper class contemporaries.

The standard of living of the people is a central concern of all historians. Ever since Marx and Engels controversy has raged around the effect of the Industrial Revolution on the working class in Britian, but in all countries the welfare of the population has been a central object of government policy, has determined political attitudes and has lain at the root of the formation of classes and status groups within society. In the long run, the standard of living of the peoples of the developed world has vastly improved, but in the short run the picture is much less clear; there have been periods in which real wages have fallen, others in which urban pollution and poor housing have increased, yet others in which increased mortality or sickness seems to have outweighed increased wages.

The standard of living, is, for these reasons, very difficult to define, even more difficult to measure. Traditional measures such as that of real income per head take little account, for example, of the distribution of earnings over the life cycle, of the incidence of unemployment, or of how the income is shared within the family. Nor do they allow for the impact of the enormous fall in mortality since the eighteenth century, which has meant that we typically enjoy our incomes for much longer.

Dissatisfaction with these traditional methods, combined with a desire to investigate the impact of changing living standard on mortality, morbidity and productivity, has led a group of historians and economists to try a new approach.

Human physical growth, in childhood and adolescence, is extremely sensitive to the environment in which children grow up. Growth in height, weight and other bodily features reflects the net nutritional status of children, the balance between the food, warmth and care which they consume and the demands which are placed on them by growth, work and disease. In the population as a whole, or in groups within it, the average tempo of growth and height achieved reflect the average nutritional status of that group, even though genetic factors play an important role in determining the growth and ultimate size of an individual child.

While such observations, and the measurement of physical growth which stem from them, are a commonplace of human biology, paediatrics and anthropology, historians have been slow to see their relevance to recent history and to the measurement of the standard of living. Just because human growth reflects so much of the environment it has great potential as a measure of living standards which incorporates, as traditional measures cannot do, the effects of mortality, morbidity and the demands of work. It cannot do so, of course, for the adult whose growth has ceased, but for the child and adolescent it can, and it is in those ages that growth is most sensitive to the environment.

Because there is substantial individual variation around the average height or weight at a particular age, it is necessary to gather many observations. Fortunately, it has been normal practice since the middle of the eighteenth century in Europe and North America to measure recruits, so the records of armies and navies provide much evidence of height at a given age, together with data about the occupations and birthplaces of the recruits. Other sources, such as censuses of slaves and the records of charities, provide similar information although, unfortunately, rarely for women.

Using these sources, historians and economists working under the auspices of the National Bureau of Economic Research have now gathered information about 400,000 people living since about 1750 in Britain and North America. About 200,000 lived in Britain and details about them have been gathered with a grant from the ESRC; many more had emigrated from Britain to the United States. It has often been possible in the United States to link details of recruits with the details of their families in the census and thus to examine the environment in which they grew up. As a result, several million items of data are now in our computer files.

The collection and analysis of this material has been slow and complex. It has required teamwork and collaboration with statisticians, demographers and programmers. Data entry terminals have been taken into archives, special techniques for the analysis of the military data have been developed, while the traditional skills of historians have been employed in source criticism and the search for data.

The initial results from this work are striking. First, several groups of children were extraordinarily short by modern standards. In London from the 14-year-old boys whom they aided around 1800 averaged 10 inches shorter than London children of the same age today. They were hardly taller than slave children brought up on the plantations of the West Indies. Virtually no European child today is as short and similar stunted growth can be found only in the most deprived regions of the world. It is evidence, both there and in eighteenth-century London, of the most severe malnutrition, disease and deprivation suffered both by the child and, probably, by his mother.

Second, the evidence is a graphic demonstration of the extent of class differences in industrializing Britain. The Marine Society's children from the London slums can be compared with the children of the gentry and aristocracy who were trained at Sandhurst. At the end of the Napoleonic wars, these upper class 14-year-olds averaged about eight inches taller than the slum children, so great a difference that hardly any of the working class children would have been as tall as any child of the upper class. While these differences narrowed in adulthood, they still remained and were clearly perceived at the time.

The working classes did not remain as short later in the nineteenth century. Much work remains to be done, but it seems likely that heights in Britain increased substantially during the second quarter of the nineteenth century before a fall, which was then succeeded by rapid growth in the present century. That rapid growth has been experienced in all the developed nations, including Japan. Growth in height is closely related statistically to growth in incomes, to changes in the distribution of income and to falls in mortality, so that substantial differences in height have existed and still remain between countries and, within them, between social classes and occupational groups.

The increase in heights has not been smooth nor continuous; indeed, there have been several occasions on which it has stopped or been reversed. Deprivation in wartime has caused this, as have periods of economic depression; it is not fanciful, on the basis of historical evidence, to believe that the present unemployment is affecting the growth and final stature of the British population.

In this respect, as in the use of the computer technology which made this work possible, the interests, methods and findings of historians match those of contemporary social and biological scientists. The work would, indeed, be impossible without the techniques of multi-variate analysis which have been developed to cope with contemporary problems. The data collection and analysis could not have been contemplated until the recent development of data entry terminals, interactive program development and database technology. Most important, the work builds on the inquiries of human biologists and sociologists who have shown the discriminating power of measures of human growth.

But the traffic is not all one way. Historical data contribute to our knowledge of the processes of human growth by providing a long-term background, spanning a much wider range of environmental conditions than is available in contemporary studies. The possibility of linking information from different sources over long time periods is a further advantage of historical work, while the complexities of doing so provide a testing-ground for database technology. The skills of historians in source criticism, as well as in identifying the features of human behaviour specific to a particular environment or time, are also much needed in many of the social sciences.

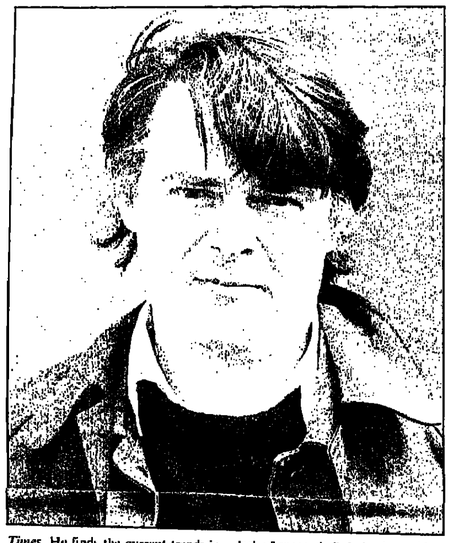
Historians are, in general, not only conservative but diffident, unwilling to claim resources or to parade their special skills. Some positively revel in not being useful. This attitude sells history short. The new technology, because it forces historians to collaborate, also encourages them to claim their rightful place among students of human behaviour.

The author is professor of modern history at Birkbeck College, London, and a research director of the Centre for Economic Policy Research. He is author of An Introduction to Quantitative Methods for Historians.

An English friendship explored

ARTS

Simon Gray's new play opened this week. He talks to Lynne Truss about theatre, Cambridge and the "intellectual obscenity" of structuralist jargon



The title of Simon Gray's new play *The Common Pursuit* is, he says, bound to have "an obvious resonance" for people who know Cambridge English. When you know that Gray was taught at Cambridge by F. R. Leavis in the late fifties and early sixties, it certainly holds the suggestion of a time, a place and an attitude to literary endeavour which the play does not disappoint.

The play begins in Cambridge in 1960, with a group of undergraduates planning what they will "give the world", and follows them through to the late seventies as they become academics, journalists, publishers – the stock of professions with which Gray customarily deals. Whereas in his most famous plays *Butley*, *Otherwise Engaged* and *Quartermaine's Terms* a central character dominates, in the new play (as in *The Rear Column*) Gray spreads the interest and humour fairly evenly among the male characters – "I like them all, you see" – and constructs as always a play that is, in the famous phrase, "well made".

Well made, and proud of it. "I think everything should be well made. Any badly made play is simply a badly made play, like a badly made car or a badly made sonnet." The phrase shouldn't be used, Gray contends, as "a term of contempt". Rather "the assumption should always be that the playwright has *tried* to make his plays well".

With its action spreading over 17 years *The Common Pursuit* gives Gray the opportunity to explore the development of "an English friendship". The structure is unremarkable, but then Gray disclaims any interest in extending the formal boundaries of drama, saying that although he enjoys it in other people's work "there's a kind of theatrical inventiveness and ingenuity that I simply lack". But he's clearly pleased with the epilogue to his new play when the scene returns to the youthful optimistic days in Cambridge. The device is simple but effective, though not designed particularly to underline irony; "I'm quite sure that if your late 17 years before, whatever the moment was, it would be packed with ironies".

Coincidentally perhaps, it was 17 years ago that Gray joined the English department at Queen Mary College, London. He's now in his last term, though he will continue to conduct seminars on a visiting basis. "I've never progressed beyond lecturer at Queen Mary. I think I have exactly the same status as when I first arrived. Which itself was a mistake – because they meant to make me an assistant lecturer and forgot on the form. It was a bureaucratic slip-up – but we used to have contracts in those days and there was nothing they could do about it". One of the reasons given for his lack of promotion was, he says with a hollow laugh, his failure to publish, a "lack of productivity".

But does he ever write criticism? All he will admit to is an annual review of books on cricket for *The Sunday Times*. He finds the current trends in literary criticism all very depressing. "If the natural language of discussion isn't sufficient for the discussion of books – if that really is the case – then in a sense books aren't worth reading. I happen to believe that books should be talked about in the language approximately in which one talks about a cricket match", a language that is "incisive, to the point, questioning". The jargon of structuralism "amounts to an intellectual obscenity" he declares, adding, "I can say this kind of thing now because I don't intend to engage in any kind of academic dispute about it".

Holding such strong views he nevertheless feels that the great McCabe structuralism dispute was handled by his old university "with a characteristic lack of generosity". Indeed, considering the way Cambridge is evoked in the new play, Gray seems to have few happy memories of his eight years there, and few good words to say for the university now. As a postgraduate there he used a student magazine to attack the values perpetuated by the examination system, upholding the view that the exams "simply encouraged lies". All they proved was that the student had the fluency (as Gray undoubtedly had) to pass them. "I do know that people who were intensely serious in their reading of English, and carefully intelligent and properly *uncertain*, did badly in exams." He says he is glad not to have taught at Cambridge except as a supervisor ("One of the most loathly aspects of Cambridge English has always been its incestuous politics") but says that he blames the university for nothing so much as for what it has done to the town, "which is so rotten that I think of it with rage". He cites high rise car parks, and the destruction of streets as outrages perpetrated by the fellows of the colleges. "It's an absolute disgrace. They should be hanged from their lamp-posts". In Cambridge, he says, "the vandals are in the common rooms".

For the literary and academic figures in *The Common Pursuit* Gray says he has used "real people's biographies, but not their lives". His method is to borrow from real life, but not to effect simple portraits of people he knows ("I have met about nine lecturers in the University of London who claim to be Butley, and not one of them is"). In the new play the character of the magazine editor Stuart uses facts from the life of Gray's friend Ian Hamilton (erstwhile editor of *The New Review*). Stuart also reflects something of the attitudes of Gray's mentor Leavis in his approach "to his particular form, as he sees it, of integrity". When Stuart's literary magazine is threatened by the withdrawal of an Arts Council grant on the grounds that it is "elitist", Stuart exclaims, "Well, somebody's got to be, haven't they? Especially at a time when nobody else wants to be."

Elitism is certain an issue in Gray's work. His characters tend to be well-bred and well-educated, and his most entertaining creations, Ben Butley, and Simon Hench (in *Otherwise Engaged*) are characterized by punctiliousness in conversation, picking up and ridiculing ambiguities in other people's less careful speech. "There are still people in the world who speak, as a matter of course, precisely. It doesn't seem to me that the fact that their numbers are diminishing means that they are no longer interesting." Gray denies that he sees anything special in the messy lives such people live in his plays ("*Everyone* leads a messy life") but agrees that Hench's punctiliousness does contribute to his unhappiness. "I struggle to uphold the belief, against all the evidence, "that because you think clearly and take up a certain attitude to yourself and the world around you, the world will fall into place in that way". This does seem to be a problem shared by a number of his characters.

Perhaps now that Gray is formally leaving academic life someone will undertake some serious criticism of his work. Why has there been so little? "I'm not taken as a very serious chap. I think it's as simple as that. It's also something to do with what they call the 'well made' play. Also, I remember opening a paper once some years ago and seeing myself described as "a fashionable playwright" – and I knew that that was the end of that."

"The Common Pursuit" opened this week at the Lyric, Hammersmith. It runs until August 11. The text is published by Methuen at £2.95.

Events

Continuing exhibitions:

Ends Sunday. **Hayward Gallery, London.** *1066. English Romanesque Art 1066–1200.*

To July 11. Boilerhouse Project, **Victoria and Albert Museum, London.** *Design at Kingston:* work by 1984 graduates from Kingston School of Three-Dimensional Design.

To July 15. **Serpentine Gallery, London.** Hans Coper 1920–1981: work of the artist potter.

To July 15. Graves Art Gallery, **Sheffield.** *Headhunters:* an Arts Council touring exhibition centred on twentieth-century portrayals of the human head.

To July 21. Library Exhibition Gallery, **Milton Keynes.** *Questions about Sculpture:* includes work by George Fullard, Henry Moore and Barry Flanagan.

To July 22. City Art Gallery, **Birmingham.** *Julia Margaret Cameron 1815–1879:* works by the Victorian photographer.

To July 22. City Art Gallery, **York.** *Light Years Ahead:* the best of British holography.

To July 28. Glynn Vivian Art Gallery, **Swansea.** *Room for Thought:* a small exhibition of eight works, selected by Hilary Lane. Includes works by Craigie Aitchison, Kenneth Martin and Emma Park.

To July 28. John Hansard Gallery, **University of Southampton.** Ray Grayson: objects, photographs, paintings.

To July 29. Castle Museum, **Nottingham.** Drawings by Bonnard.

To July 29. Museum of Modern Art, **Oxford.** *Tradition and Renewal:* contemporary art in the German Democratic Republic. Also *'SNAGIC'*: original illustrations from children's books.

New exhibitions:

From tomorrow. City Museum and Art Gallery, **Stoke on Trent.** *Working with Colour:* Bridget Riley, best known for her black and white paintings in the 1960s, experiments with colours from ancient Egypt.

From July 12. Impressions Gallery of Photography, **York.** *What a Woman can do with a Camera:* Francis Benjamin Johnston 1864–1952.

From July 14. Usher Gallery, **Lincoln.** *Fact, Opinion, Views:* an exhibition of townscapes organized by the National Gallery.

From July 19. **Arts Council, 105 Piccadilly, London W1.** Samuel Johnson 1709–1784: exhibition to commemorate the two hundredth anniversary of Johnson's death. As well books and manuscripts the exhibition includes all the principal portraits of Johnson.

Dr Johnson: at the Arts Council.

Glynn Williams: "Holding, Kneeling, Protecting"

A dance to the music of stone

Figures in a Garden
Yorkshire Sculpture Park, Bretton Hall College
To September 2
A New View of the Garden
High Wall, Pullen's Lane, Headington, Oxford
July 12 to August 4

An almost hysterical outburst of new sculptoral forms in the last thirty years has tended to distract from more traditional work in traditional materials. Yet it is impossible to know what holds the key to the future, and it is no shame in art to speak an existing language provided one can speak it forcefully. So cheers to the Yorkshire Sculpture Park for an exhibition on the human figure.

One of the highlights of the exhibition is Glynn Williams's "Sitting Still" in tar, licks-coloured ancaster stone. The girl with her knees raised, arms slung round them, is patently still; bound to the earth through chunky feet, but she is also immensely arresting, as if a potent energy swirled through the spatial loops and flow of her limbs.

This vitality is typical of Williams, who is joint selector together with Edward Lucie-Smith. While he does not think the best contemporary sculpture is necessarily figurative, he does think there is interesting figurative work coming from a younger group. Several of the exhibitors have connexions with Wimbledon School of Art where is head of the sculpture department.

John Skelton shows a female torso in the beautiful black-flecked Cornish Polyphant stone he often uses (he has 15 outside pieces at Brighton College until the end of August), Michael Cooper's sylph-like white marble torso makes a good contrast with Eugene Dodeigne's hauntingly fluid "Couple" in rough Belgian granite and Lee Grandjean's elm "Woman and Child" hold their pitch with boisterous rhythm at the base of the formal garden. There is humour in Gordon Young's binocularel "Tank Commander Bird" peering from a flurry of rhododendrons and from Hilary Cartmel.

Williams is wary of self-consciousness and anything else that threatens to interfere with his basic intentions. Until about five years ago he was making abstract sculpture; he turned to figures because he felt his work was ambiguous and because he wanted his messages to be loud and clear. His forms are unconventional, strong, emotive and organic; a perspective he has learned from trying to open up his stone as much as possible like church pillars and vaulting. He has looked at African and South Seas sculpture and he has gone back to the origins of modernism to early Epstein, early Moore and Gaudier-Brzeska. He is less interested in what has happened since.

With the Liverpool International Garden Festival setting the pace it is a good season for open-air sculpture and there is more in a privately owned Harold Peto landscape where the Oxford Gallery is holding "A New View in the Garden". An architect with a passion for Italian Renaissance, Peto crammed his gardens with Ionic columns and classical sculpture, creating in the process something essentially Edwardian and English.

High Wall, Pullen's Lane, Headington, Oxford is therefore highly appropriate for a display of furniture, equipment and ornament in nearly three acres of terraces and lawns with a temple, trees and a stream. There will be tables, deck chairs and hammocks; willow baskets, ceramic planters, a range of sundials and bird-baths as well as sculpture. Following Sir Roy Strong's comments about the quality of the garden accessories at last year's Chelsea Flower Show, the idea is to promote good designs that could be acquired by the average garden owner, showing simultaneously that the garden and its contents can be carefully integrated.

A tiny bronze figure roller-skates precariously around the rim of a sundial; a bronze nymph claps her hands at the top of a musical water fountain; Quentin Bell's large, fibre-glass lady floats like a cloud, overlooking the garden scene and two other figurative sculptors, Simon Verity and Polly Ionides, exhibit in stone.

Polly Ionides's work shows unusual clarity, intensity and sensitivity to its materials. "Comfort", made from a boulder of French limestone, portrays two figures in reassuring embrace, strong yet tender; and her Portland stone "Flora" positively radiates the glad spirit of summer and flowers as the weight of the body shifts from buttocks to shoulders in sweeping curves. To convey the feeling of Flora without putting daisies in her hair is what the sculptor sought and so evidently achieves.

Sally Festing

BOOKS

The getting of proletarian wisdom

by Ben Pimlott

Proletarian Philosophers: problems in socialist culture in Britain 1900–1940
by Jonathan Rée
Oxford University Press, £15.00
ISBN 0 19 827261 8

Is there – can there be – an independent working class culture that is truly intellectual? In his pioneering *A Proletarian Science* (1980) Stuart Macintyre pointed to an important tradition of British working-class "autodidacts", self-taught scholars who developed a brand of "proletarian" Marxism that reached a peak of influence in the early 1920s, before it was killed off by the sterile dogmas of middle-class Stalinist intellectuals. Examining the decline of this essentially pre-Leninist vernacular, Macintyre felt that much of value had been lost. Jonathan Rée, rereading some of the same ground, is less sure. In this elegant and energetic essay, he seems to suggest that quackery and self-justification were the main ingredients of autodidactic Marxist theory. At the same time he points to a central, and continuing, proletarian dilemma. How can the working-class escape the political and economic domination of other classes, while accepting the domination of their ideas?

It was this conundrum that led Victorian self-improvers to philosophy, conceived as an all-embracing attempt to explain an oppressive world. "Philosophy finds its *material* weapons in the Proletariat", wrote the young Marx, "just as the Proletariat finds its *spiritual* weapons in Philosophy". For the autodidacts, however, philosophy was less a spiritual weapon than a form of spiritual expression. Marx was admired, in some cases even read, by self-taught working men who did not seek to emulate or join the middle classes. Yet it was precisely the most defiantly class-conscious who faced the cruellest dilemma. On the one hand, the acquisition of literary culture against the odds filled them with "a somewhat acrid feeling of proletarian righteousness" at their ability to equal or surpass the leisured classes in the middle-class cultural game. On the other hand, there was an uncomfortable awareness that the rules of the game, providing the framework and much of the content of their learning, had been set by their exploiters. What made the dilemma more acute was the link that existed between self-teaching, self-help, self-denial and nineteenth-century religious nonconformity. "In 1900 we got converted to socialism", wrote Tommy Jackson, whose autodidacticism began with a tuppenny junkshop copy of G. H. Lewes's *Biographical History of Philosophy*, "almost literally in the same way that we became converted from sin to 'Salvation'". Such conversions increased the appetite for knowledge, and hence for books written by representatives of the class enemy.

Jackson and his friends, believing (as Rée puts it) in "a certain rather majestic kind of Marxism", hoped that education would open the workers' eyes to the tricks played by the capitalist class. The aim was to discover the human potential for happiness, but also to change, in the words of the Socialist Labour Party, the working man's "crude and untutored discontent into intelligent and educated revolutionary thought and action". Reaching up into the citadels of middle-class learning for what it could give, the radical autodidacts encountered bourgeois progressives coming the other way: high-minded disciples of the "Oxford Hegelian" T. H. Green, seeking to bestow upon their less fortunate brethren the benefits of civilized culture.

Though more successful among aspirant members of the lower middle class than among the working class, the University Extension movement nevertheless offered the proletarian autodidacts both an opportunity and a challenge. When Ruskin Hall was established in Oxford, the aim, according to the founders, was to enable working-class scholars to "lead a life worthy of a citizen and a man", while not disturbing the social order. "It is not intended", they declared, "that a man should rise out of his class to swell the already-crowded professional classes". Here, as it happened, was a real problem. For if the function of a liberal education was to train men to become lawyers, clergymen and civil servants; and if the number of positions for lawyers, clergymen and civil servants remained small; what was the purpose of a liberal education for the large and growing numbers who wanted it but were surplus to requirements?

Rejecting the view that Ruskin should help workers to take up culture "in much the same way that a professional man might take up gardening", a dissident group of students within the college (as it had become), presented their alternative: working-class education that was of, as well as for, the working-classes. The result was the Plebs League, set up in opposition to "the permeation of University ideas in the minds of the young blood of labour". By the early 1920s, the "Independent Working-Class Education" movement, with its Central Labour College and its residential and correspondence courses, had 30,000 part-time enrolments.

The "Plebs" considered "proletarian philosophy" an indispensable part of revolutionary socialist education. Yet what was "proletarian philosophy", and what were the features that made it distinctively proletarian? For members of the IWCE movement, one "proletarian" philosopher, almost unknown in the university world, was pre-eminent: Joseph Dietzgen ("Ditchkin" as the miners called him), a former tanner, a contemporary, disciple and interpreter of Marx, and the author of many opaque Germanic tomes. Rée is interested, not in the thoughts of Dietzgen, which he finds anodyne, but in the phenomenon. Why, he wonders, did generations of knowledge-seeking workers treat Dietzgen's ponderous and often incomprehensible works as holy writ?

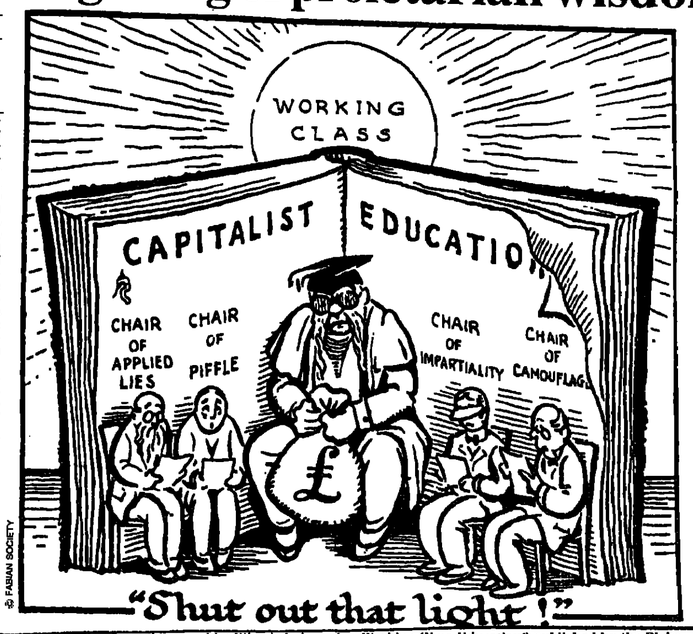
The reason appears to have been the compelling appeal of Dietzgen's central idea. The proletariat, Dietzgen contended, was the progenitor and true inheritor of philosophy. Dietzgen's heavy foreign jargon seemed, paradoxically, to justify a message which the working-class radicals wanted to believe: that university wisdom reflected the assumptions of the university-attending classes, and that true understanding resided elsewhere. "When he was not fanning hides in his tannery in the little Rhineland town of Sieburg", wrote a typical admirer, "he was in his leisure hours tanning the hides of the decadent philosophers".

In the end, university-trained Marxists rumbled Dietzgen, asking the embarrassing question "Is Dietzgen and all Dietzgen stands for worth studying at all?", and the Labour College movement was persuaded to put the old charlatan on the shelf: but not before he had gained a place in the autodidacts' pantheon alongside Marx and Engels. Few British workers made much progress with Dietzgen undilute. Vernacular textbooks on "Dietzgenism", however, turning gobbledy-gook into homespun proverbs, continued to circulate among working-class radicals long after the British Communist Party had officially proscribed them.

Did Marxism have a "philosophy" at all? Lenin, who apparently held Dietzgen in high regard, followed him in thinking so. Not all of Lenin's supporters agreed, and there were some in Russia who campaigned under the banner: "Science to the bridge – Philosophy overboard", seeing philosophy *per se* as a prop to the bourgeoisie. It was after Lenin's death that "philosophy", redefined, came into its own as part of the Comintern's global strategy. Pro-Stalin red guards seized control of the Soviet academies, seeking to codify "dialectical laws" and demanding "the unity of theory and practice". According to Rée, it became absolutely indiscernible whether the new, "proletarian" professors "supposed that party policy was to be determined by philosophical argument, or whether it was the opposite way round".

Thus, in Britain, one kind of opiate replaced another. Here was a strange twist. The new "dialectical materialism" had been invented in Russia to beat down the Russian bourgeois professors. It was imposed on British comrades in the early 1930s to replace the vulgar Marxism of Dietzgen and its locally adapted forms. Yet dialectical materialism was, if anything, even more impenetrable than Dietzgenism, and only the bourgeois professors could claim to understand it. As a result, British working-class Communists, while accepting the correctness of dialectical materialism, left its interpretation to the intellectuals – the very group whose influence it had originally been devised to undermine.

Oddly enough, while the appeal of Dietzgenism had been almost entirely restricted to working-class socialists, dialectical materialism for a time enjoyed a vogue in some sections of the intelligentsia. Little interest was aroused among professional philosophers, who saw it as a throwback to the bad old days of Platonism and Hegelianism, which had been overtaken by advances in the discipline. Natural scientists, however, were attracted by its apparently "scientific" view of society, and by the light it seemed to shed on the history of science. In the hungry and war-threatened thirties, it also appealed to many writers, poets and artists, encouraged by its alternative certainties.



An illustration from the pamphlet *What is Independent Working-Class Education?* published by the Plebs League in 1920. The league opposed "the permeation of University ideas" among workers.

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saw as a virtue of the new doctrine that it had "laid quietly to rest the ghost of Joseph Dietzgen". Unlike the Dietzgenists, however, those who professed to see meaning in dialectical materialism generally stood outside the culture and routines of most socialist and Marxist activists. The Communist hierarchy was happy to keep them there. Where the old autodidacts of the Plebs League had regarded orthodox academic distinction with contempt, the Communist Party of Harry Pollitt revered it. There were many stories of eager young Communist students being told to resist the class struggle by working for a first. British Marxism had, indeed, come full circle.

Often, in this stimulating book, one is struck by the inappropriateness of terms. The issue was theological not – as the disputants believed – philosophical. The search was not for knowledge but for a politically serviceable religion. Perhaps, therefore, it is as unfair to see Dietzgen or his Stalinist supplanters intellectual tests as it would be in the case of Joseph Smith and the Book of Mormon. Nevertheless, the dissatisfaction of the proletarian autodidacts – the reason for their search – is important. Questions fundamental to all education (where should it come from, what is it for, what values should it adopt, whose interests should it serve?) are no closer to resolution. With witty, lucid open-mindedness, Jonathan Rée provides an imaginative and unusual contribution to the debate.

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Sustained by oil

Venezuela: a century of change
by Judith Ewell
C. Hurst, £12.50
ISBN 0 905838 36 X

Venezuela is one of the few South American countries to have enjoyed a democratic system throughout the past 25 years. Some observers have come to regard it for this reason as an example to the rest of Latin America while others have tended to see it as material proof that oil wealth can buy anything. Certainly Venezuelan democracy has been characterized by lavish spending from the major parties, a heavy dose of patronage in appointment to public office and not a few corruption scandals. It would be too cynical to regard it simply as a gravy train, but there can be no doubt that the political system faces some severe tests during the austerity which is now following the end of the oil boom.

Despite the distinctiveness and importance of the Venezuelan political system, there is a remarkable scarcity of good reading material in English on the subject. There have been some quite good collections of essays and several political party studies conducted in the early 1960s; before that there was Rómulo Betancourt's own remarkable *Política y Petróleo* written in the 1950s. Individual topics (notably the oil industry) have also received substantial treatment. However there is less general material of a kind which can be used for teaching purposes.

This gap was certainly in the minds of the publishers when they approached Judith Ewell for a concise modern history of Venezuela. On the whole the task is performed well. It is true that Ewell's book does not really tackle the difficult questions relating to the nature of Venezuelan exceptionalism. Her underlying assumptions are perhaps too evolutionist and optimistic – biases which a closer look at some other Latin American countries would help to dispel. Venezuela has avoided the acute social conflicts that accompanied the emergence of mass politics in Argentina and Chile; even the unpleasant and corrupt Perez Jimenez regime was more benign than those of Pinochet or Videla. There was, moreover, nothing in Venezuelan political tradition that suggested the likelihood of its successful transition to democracy after 1958; this was in many ways a triumph of hope over experience. Moreover, while the oil boom is discussed in some detail, the author's rather narrative account does not analyse the difficulties of using oil money as an agent of economic transformation (difficulties felt in many other oil-exporting countries) or of the particularly Venezuelan ways of trying to resolve them. It would be unreasonable to expect the author to provide totally satisfactory answers to these questions, but a comparative perspective would have helped.

What Judith Ewell has provided, however, is a reliable and at times engaging narrative of the last hundred years. She conveys a detached sympathy with almost all of the political, intellectual and social figures around which the discussion centres, and grants intellectual and cultural history its due importance.

George Philip

George Philip is lecturer in Latin American politics at the London School of Economics.

BOOKS

Syntax rules

Invitation to Linguistics
by Richard Hudson
Martin Robertson, £14.50 and £4.95
ISBN 0 85520 665 9 and 666 7

Linguistics Today
by Keith Brown
Fontana, £3.95
ISBN 0 00 636486 1

Since linguistics is not yet part of the school curriculum, it is often difficult for students considering it as a course of study to know what they would be letting themselves in for. Richard Hudson's *Invitation to Linguistics* will give even sixth formers with little spare time for reading outside their A level subjects an accurate and engaging impression of what the study of linguistics actually involves.

What makes Hudson's book different from other introductory books on linguistics is that it is a practical guide rather than a descriptive survey of the field, and is written in a way which directly addresses the reader. It starts from where the reader is likely to be, treating him or her as an expert on at least one language, English, about which reflection is invited. This approach is quite in contrast to the conventional approach in introductory textbooks where the emphasis is on the author as expert, imparting information to an ignorant reader.

The chapters entitled "Things You (sort of) Know Already" includes a questionnaire whose overt aim is to persuade readers that they are authorities on their own native varieties of English. For example, readers are invited to decide whether they would say "She helped John and me" or "She helped John and I". Neither is considered right or wrong, but both can be described by different rules. In another chapter, on puzzles from various languages, Hudson gives actual examples, for the reader to try, of the kinds of problems linguists try to solve, such as how the phonetic contexts of two Zulu vowels differ. He also gives step-by-step advice, of a kind I have not seen elsewhere, as to how to achieve solutions. This could help advanced as well as beginning students. All in all, Hudson manages to present a broad and enticing view of linguistics, balancing the strange with the familiar, general issues with particular problems, and theory with practice (including careers advice).

Keith Brown's book *Linguistics Today* has a more specific focus than Hudson's, and might more aptly be called *Syntax Today*, since anyone who wants to know about another major area of linguistics, such as phonology, will not learn much here. Brown sees syntax as the "the principal task of linguistics", which is a common view as a result of Chomsky's influence, but is by no means uncontroversial. Having said that he will focus on syntax, Brown provides a fairly broad definition of this as "the way in which words can be combined and manipulated to convey meanings". This is followed up in chapters four to seven with a concise and impressive survey of the main approaches to syntax. It is impressive for its comprehensive and up to the minute coverage.

The chapter "The Rise and Fall of Transformations" is the first I have seen that introduces two recent approaches at a basic level: government and binding theory and generalized phrase structure grammar. Brown also manages to deal with approaches to syntax that take function rather than structure as primary. Throughout the four chapters of the book which deal with syntax, Brown's discussion is well organized and easy to follow.

There are also chapters on non-syntactic topics, such as the introductory chapter "Language and Communication", and "Models of Language". These chapters are not clearly related to the syntax section, nor are they so lucid themselves. It might have been better to have expanded the syntax section alone to book length, or to have provided "contextualising" chapters which contained more discussion of controversial issues directly relevant to syntax, such as competence versus performance, the role of intuitions, and variation. However, the book as it stands will certainly be of use to teachers and students of syntax.

Margaret Deuchar

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Everyday speech

Language and Society
by William Downes
Fontana, £4.95
ISBN 0 00 636185 4

Both sociolinguistics and pragmatics analyse language as it is used in daily life; both, therefore, extend the study of language beyond the restricted limits imposed by Chomskyan linguistics. This book surveys current findings within these two disciplines, and is a useful and original introduction to language and society, its main originality, though, lies in its attempt to relate the two disciplines within a single theoretical framework.

Chomskyan linguistics searches for universal features of language – of linguistic "competence" – that can ultimately be explained in terms of invariant properties of the mind. Sociolinguistics and pragmatics, in contrast, seek to understand those properties of natural language that enable it to function as a system of communication. Both analyse everyday speech, in its social context – which Chomsky rejected as mere "performance".

The most striking characteristic of natural language must be its variability, and perhaps the most striking achievement of sociolinguistics to date is the development of techniques to analyse this variation. Downes provides an informative and very readable account of the known relationships between variation and large-scale social factors, showing, among many other things, how the variation in language runs along "fault-lines" in social structure", such as the divisions between social classes, the sexes and different ethnic groups. An excellent chapter devoted entirely to the pronunciation – or not – of post-vocalic "r" in words like "car" and "card" in Britain and in the USA illustrates this neatly, showing how the same linguistic variable has different social meanings in different speech communities, and pointing to the effects of social factors on the diffusion of language change.

The book also shows how speech can be seen as social action – as the assertion, for example, of a particular, perhaps fleeting, social identity – and how the correct interpretation of such actions depends on a shared knowledge of idealized sociolinguistic norms.

The chapters on pragmatics deal mainly with speech acts, conversational structure and conversational implicature. The scope is ambitious, touching on philosophy, anthropology and artificial intelligence, and the coverage is inevitably brief, sometimes overly so. The aim in this part of the book seems less to provide a comprehensive survey of the subject than to point to the parallels that exist between the findings of the two disciplines. Downes points out, for example, that the frameworks of everyday belief through which we interpret language are governed by social norms, in the same way that linguistic variation is; and speech acts should be interpreted as social actions, as too should sociolinguistic variation.

It is a pity that the conceptual links between pragmatics and sociolinguistics are not developed more fully. For one thing, the necessarily brief presentation that is typical of an introductory book sometimes creates problems – it is implied, for instance, that statistical correlations can be taken as explanations. And since the theoretical implications are far-reaching, they deserve better treatment. Downes points to the similarities between the ways in which we understand utterances and the ways in which we exploit variation. These abilities are probably universal, reflecting the structure of the mind, but they are not specifically linguistic abilities, for the framework of beliefs and the social conventions that we use to organize and to interpret language are the same as those through which we interpret the world. If we accept this, then the domain of Chomsky's competence is drastically reduced.

Overall, though, this is a stimulating book, and one which accomplishes the difficult task of being suitable for both the student of language and the general reader.

Jenny Cheshire

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Acres of words

Thomas Hardy's English
by Ralph W. V. Elliott
Blackwell/Deutsch, £22.50
ISBN 0 631 13659 2

William Barnes: the Dorset poet
introduced and selected by Chris Wrigley
Dovecote Press, £4.95
ISBN 0946159 17 3

Thomas Hardy's English was the language of Dickens and Jane Austen, Trollope and Thackeray, it was inevitable that Thomas Hardy's English should come up for consideration; and Professor Elliott has worthily enriched the series with this study. A reviewer of one of the earlier volumes described it as "an odd exercise". The examination of the language of a novelist (and poet also, in this case, of course) is more than justified, however, provided that the examiner does not descend to the tedium of too many linguistic minutiae; or on the other hand, abandon his brief for too many excursions into literary criticism. Professor Elliott avoids both pitfalls, and provides a sensitive, lively, and comprehensive survey.

After a discursive glossary of some of Hardy's dialect usage, Elliott considers some sources of vocabulary and idioms – the Bible, Shakespeare, the Greek and Latin authors. The scriptures, for Hardy, were, he says, inborn, Shakespeare inbred, and the classics inherited. Among nineteenth-century influences on his vocabulary, Auguste Comte and J. S. Mill are seen to be important; and both Hardy's official study of architecture, and his unofficial absorption, as an autodidact, in music and painting, clearly left their mark.

Thomas Hardy, 1914.

A chapter on "Acres of Words" (the phrase is Michael Henchard's) proves still more central to Hardy's English. Among other things, there is a close consideration of the writer's compound words, in prose and poetry. The neologisms in this vein, often brilliant, usually felicitous, sometimes forged with an endearing doggedness, are displayed; though not quite all those listed are the writer's invention – a few such as "a come-by-chance chiller", and "overshoe" in "to flood the lane overshoe" are regular West-country dialect. But of the fecundity of invention there is never a doubt; and there are some curious anticipations: "queen-beauty" anticipates by forty years the American invention of the beauty queen; "whole-souled" recalls the modern American evangelist; while calling Henchard "the self-alienated man" foreshadows more recent developments in drama. One can work backwards in time from these compounds too, as when "the foam-fingered sea" is seen to have echoes reverberating through Swinburne back to Old English elegiac poetry. On one occasion, the connexion of Wessex English with German, which clearly fascinated Hardy, as it did still more his mentor, William Barnes, leads to the loan-translation "home-woe", from *Heimweh*. Sometimes a felicitous compound contributes tellingly to the effect of a line, as in the well-known poem "Weathers": "And *hill-hid* tides throb, throe on throe": or of a whole poem, as when Emmn, the poet's first wife, is seen in vivid memory as "bright-hatted", but now to be found "in her yew-arched bed".

A different sort of compounding occurs in the frequent prefixes, attached to nouns, adjectives, and especially verbs (Hardy tends in his verse to gravitate towards verbs); as in "unbe", "unhope" (of "respectable antiquity"), "overgloomed", "enarched" and "inwrapped". Elliott sees this patterning as deriving from the metrical model of Barnes's verse; not a direct copy of such compounds, but a replacement of Barnes's ubiquitous a-prefixes before present and past participles. Barnes, of course, wrote chiefly in dialect, but in standard English, such as Hardy always aspired to, this prefix was obviously less useful. The metrical and syntactic gap was often filled by prefixes of prepositional or adverbial import. The subtle effect that such a device could achieve is suggested by Elliott in his discussion of the poem "The Darkling Thrush", written at the turn of the century:

> The land's sharp features seemed to be
> The century's corpse *outleant*,

where, he believes, the first meaning "stretch out" needs supplementing with the (very) archaic verb "to make lean". So Hardy's wintry landscape is not merely spread out corpse-like, but is made "lean, fleshless and withered".

Two chapters entitled "Tapestries of Rhetoric" and "The Technicist" (the last word is, of course, Hardy's) deal with wider aspects of syntax, punctuation and style. Some of the faults the novelist has been charged with are seen to be virtues; for example the use of the passive voice frequently to involve himself and the reader in the action, or to widen the focus of *The Dynasts* to general anonymity. But Elliott admits that when Hardy attempts to generalize from the particular incident or experience, he is "liable to flounder". In verse, where he generally focuses on the particular, there is no floundering, and it is precision, doubtless, that helps to make him, in Elliott's phrase, "Banquo to a line of twentieth-century poets".

Fittingly, at the same time as this book, there appears another selection, from the Dovecote Press of Wimborne, of the poems of William Barnes. The editor, Chris Wrigley, pays tribute to the definitive edition of Dr Bernard Jones, but hopes that, with this relatively cheap selection, the poet will reach a wider public. An introduction gives some account of Barnes's not very revolutionary social criticism, and deepens our appreciation by considering his erudite, but generally unobtrusive, use of unusual metres. The poems speak for themselves, or rather for the most underrated poet in the canon of English literature.

K. C. Phillipps

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British Babel

Language in the British Isles
edited by Peter Trudgill
Cambridge University Press, £37.50 and £12.95
ISBN 0 521 24057 3 and 28409 0

Every so often *The Times* prints a clutch of letters to the editor deploring the failure of our educational system to produce enough speakers of French, German, Japanese, Arabic or whatever language seems important to the latest phase of the political situation or the export drive. Nowhere in our educational planning does there seem to be any place for serious stock-taking about what our national policy should be with regard to the languages already flourishing in the British Isles and to the learning of those with which our citizens may come in contact.

If any such exercise of stock-taking were ever to take place, this book would become essential reading for all involved in at least part of it. Peter Trudgill is a pioneer of sociolinguistic studies in Britain, the quality of whose prolific publications since 1974 was recognized by promotion to a chair at Reading last year. (A much wider readership is deeply in his debt for that indispensable handbook *Coping with American*, 1982.) In this substantial new volume he has brought together over thirty studies by contemporary scholars of the mainstream and the regional varieties of English, together with the diverse Celtic and other survivors, including the French of the Channel Islands, the Scandinavian "Norn" of Orkney and Shetland, and exotic gypsy dialects like Anglorommani and Shelta. The linguistic consequences of recent immigration, especially from Asia and the Caribbean, are also treated.

In one sense, this book has something of the character of a museum showcase: the distinctive regional varieties which it describes may be on their way to extinction. As John Edwards points out, the revival of Irish as a regularly spoken language, promoted at massive financial and social cost, has not succeeded. The viewing figures for the new Welsh ITV channel are a sad commentary on that language's long-term ability to retain its hold against English, and A. J. Aitken's model chapters on Scotland document the long and continuing retreat of Gaelic before varieties of English. Linguistic imperialism, once pursued by active suppression, now takes more subtle, insidious, but in the long run more devastating forms.

This book raises more questions than it attempts to answer, and of no groups is this more true than the new minorities. How long will (say) Gujerati speakers want to go on investing heavily in learning what we call their "mother-tongue" when their mothers and indeed grandmothers have received all their schooling here? How long, and for what purposes, will those of an increasingly remote Caribbean origin continue to develop the use of a distinctive patois in order to express their alienation from a society which rejects aspects of their culture or which simply operates prejudice against them?

The way we treat those groups whose linguistic markers signal the identity they wish to preserve or to assert is of course crucial, and schools are clearly the focal point for language policies. The tendency of linguistic theorists to revalue disparaged or threatened varieties and to promote their use in schools has exposed them to criticism, since the policies they support are often seen as producing the opposite effects from those intended. Instead of encouraging such speakers to luxuriate in their native speech forms, it would be more helpful to the already socially disadvantaged to invest in compensatory programmes which improve their access to the standard English which is, as many of these writers confirm, "the dominant language of literacy in education, in the media, in the workplace, in government and in all aspects of British life". Trudgill himself has long been vulnerable to this criticism, and so are some (but by no means all) of his collaborators. Nor is the argument clarified by the ritual repetition by Jim Milroy, in an otherwise admirable summary of the history of English, of the thesis that "all languages and dialects are equally well adapted to the needs of their users at any given time" – a formulation which is at best unhelpful and at worst untrue.

The innocent pleasure of the dialectologist in seeking to perpetuate historic forms must not blind us to the hard questions which follow from the rich sociolinguistic feast represented by this book. What we really need to be asking is: just how disabling will it be for tomorrow's citizens if they are able to speak only Welsh, or Gujerati – or indeed Scouse? What price do we pay if we set out to foster such languages or varieties in addition to standard English? No less pertinently, what price do we pay if we do not succeed in remedying the widespread ignorance of the nature of language which (as Jenny Cheshire's chapter shows) leads our teachers and public examiners to mishandle the efforts of non-standard speakers to communicate?

John Honey

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BOOKS

Poisoning young minds

A Haunt of Fears: the strange history of the British horror comics campaign
by Martin Barker
Pluto Press, £4.95
ISBN 0 86104 751 6

"Horror" comics had titles like *Black Magic*, *Frankenstein*, *Manhunt*, *Haunt of Fear* and *Tales from the Crypt*; the stories were spooky and often violent. They were published in Britain in the early fifties, accused in a sudden and vigorous campaign of "poisoning the minds of children" and banned by act of Parliament in 1955. *A Haunt of Fears* describes the nature and impetus of the campaign, questions the validity of the criticisms that were directed against the comics, and analyses the comics' narrative methods and political significance.

Through research and interview, Martin Barker finds that, alongside the conservatives and professionals (teaching unions) we might expect, the English campaign against "horror" comics was stimulated and run by members of the Communist Party. Comics were a good issue through which to stir up suspicion of United States cultural imperialism, and the campaign was largely successful in concealing its political motivation. This is a fascinating discovery in terms of the history of the left in the postwar period: it is part of a wider withdrawal in the face of cold war and consensus from a recognizable class politics into an appeal to an undifferentiated British "heritage".

Barker's investigation of the American case against the comics shows that it was contradictory and dependent upon systematic misrepresentation. In Britain there was little analysis: it was taken as obvious that the comics must be bad. Generally the assumption was that the non-normal is dangerous – for instance "Wonder Woman", it was said, "is an undesirable ideal for girls, being the exact opposite of what girls are supposed to want to be".

Barker analyses some of the strips, reproducing them entire. He doesn't admire them all, but argues that very many aspire to a narrative formula based on parody and shock-logic. The formula offers the pleasure of a "dare", playing with our nerves, and it has the political significance of a challenge to customary beliefs. In "Whirlpool" a horrific assault on the personality of a helpless woman is followed by the explanation that she is being treated in an insane asylum. But we have seen the experience from her point of view – as many patients must see it. The mocking introduction by "the Vault-Keeper" – "Hang on to your *normality*, or this one will really have you *hanging* on the ropes" – helps to deprive us of any easy way of responding to the narrative and the questions it raises.

Lucy, "The Orphan", living happily ever after.

The comics challenge orthodox wisdom about the family, our understanding of the natural and our control over ourselves, about what it is to be different. The confrontation is sharpest around ideas of childhood. A notorious strip was "The Orphan", which shows little Lucy made unhappy by her parents' quarrelling, but lured into a belief that her mother loves her. When she learns that she is only being used by her mother – who wants to keep secret an affair she is having with Steve – she is disillusioned. Her father is shot and her mother and Steve are sent to the electric chair. In the last two frames we see Lucy living with her aunt enjoying all the love she needs since, she gleefully tells us, *she* shot her father. The crucial point, which the critics obscured, is the way the narrative is constructed. Lucy is presented as a pretty, vulnerable little girl with an ordinary need to be loved, and the revelation at the end is designed to be maximally shocking. The strip evokes and then confronts assumptions about what a child is like; Lucy has manipulated even us, for she is the narrator of the strip.

Another telling instance is the rearrangement of "Hansel and Gretal" in which the old woman (or witch) is good and the children nasty: the strip suggests that the received version is that told by the children. Barker concludes that the comics, at their best, promote "that critical doubt and shocked rethinking which is a mark of a healthy human being, whatever her or his age"; they were opposed because they were subversive.

A Haunt of Fears has important implications for current debates about "pornography" and video "nasties". I found it a compelling and persuasive read.

Alan Sinfield

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Rotting the brain

The Age of the Dream Palace: cinema and society in Britain 1930–1939
by Jeffrey Richards
Routledge & Kegan Paul, £19.95
ISBN 0 7100 9764 6

W. H. Auden saw the proletariat as "By cops directed to the fug/Of talkie-houses for a dug." He didn't of course mean that the police frog-marched people to the cinema but that films were the opiate of the masses.

As Jeffrey Richards points out in this illuminating book, Auden's view was shared by a number of left-wing intellectuals of the 1930s, for whom the cinema was a cultural disaster. For others, less left-wing, more vociferous, more numerous and more likely to be near or at the centres of power, film represented the opposite danger. Its moral and political influence was potentially subversive. Both sides agreed that going to the cinema could seriously damage your health. Sitting too long in a plush seat ruined your posture, the smoke-filled atmosphere was bad for your lungs, the artificial light made for eye strain. But most important, films rotted your brain.

Much the most interesting part of *The Age of the Dream Palace* is that which Richards devotes to the moral and political objections raised against the new entertainment industry. In 1935 Cosmo Gordon Lang, then Archbishop of Canterbury, was worried that as 25 million people a week witnessed what he called "these entertainment films," it followed that the cinema had become "the most potent influence existing upon the national character and its standards of life and morality." Twenty-five million might be a shade on the generous side, but Richards points out that by 1938 some 5,000 cinemas were operating in England and that they were regularly well attended. Housewives went in the afternoon, the younger generation in the evenings, families at weekends and children for special Saturday matinees. And cinemas were open on Sundays, a matter over which the Dean of Canterbury waxed wrathful, since films would cause "even greater laxity than now" in the "shop" of his idea of Sunday. That idea was "to stand at his door with his coat off to hear the church bells, to see his children well dressed, to see the whole family at home for Sunday meals and to see nothing break up the family unit." Clearly, in the eyes of the church at least, dream palaces were to the 1930s what gin-palaces had been a century earlier.

Sunday opening was a battle the authorities lost. But they won a war when it came to the matter of censorship. They were aided by a particularly nasty journalistic campaign, in which it was asserted that the hidden devils behind the film industry were cynical and sex-mad (Jewish) financiers; and they were certain, at least according to the Vice Chancellor of Birmingham University, Sir Charles Grant Robinson, that "a vast army of the least intelligent and least morally equipped members of society were allowed to have all sorts of intellectual and moral poison pumped into them without any kind of interference." True, a few bombs were lobbed from the other side. "Crime is the result of rotten living conditions", Sir Wyndnam Childs pointed out, "so don't blame films." But the fact that he was former Assistant Commissioner of the Metropolitan Police did not help his case. For it was not only church and civic dignitaries who were convinced of the bad effect of films. Politicians of all shades of opinion agreed with Arthur Greenwood that the majority of films "bring into contempt western civilization."

It is hardly surprising that the British Board of Film Censors, which the film industry had itself set up, should therefore go out of its way to avoid causing the kind of confrontation that might have led to the closing of cinemas and loss of fortunes. Foreign films are out here mainly. But went politics. *Battleship Potemkin* could not be seen. Nor could any anti-Nazi film. As for the domestic front: the BBFC appointed two script examiners to advise on whether submitted treatments could go to production. Colonel J. C. Hanna (born 1871) and Miss N. Shortt (daughter of the chief censor, the Rt Hon Edward Shortt) had no thing in common except their absolute unfitingness for the work they were called on to do. As an old soldier, Hanna took exception to any script that showed the army in a poor light. He came down especially heavily on those which offered a critical view of the English in India. Nor did he think it right for films to attack the persecution of Jews. "This is pure anti-Hitler propaganda and as such I think it unsuitable for production as a film," was his comment on the script of *The Mad Dog of Europe*. He also put his blue pencil through scripts which in any way suggested that the police or judiciary might be corrupt or inefficient; and he did not approve of films which proposed to show criminal types, if those films were to be set in England. *Tiger Bay* had therefore to be completely re-drafted with the result that its location now became "somewhere in South America." (This was perfectly acceptable. Hitler's Germany apart, foreign countries were full of criminal types). As for Miss Shortt, it may be enough to point out that against one script she wrote "Twirp – I do not know if this word has a censorable meaning."

Faced with the kind of evidence that Richards so resourcefully produces it's difficult to know whether to laugh or cry. He himself keeps an admirably straight face, and despite an overlong section on the star system – and on such of its products as Gracie Fields, George Formby and Jessie Matthews – he has written a useful and entertaining book. And a saddening one, of course. For you have only to think of the talent and opportunities available to the British film industry in the 1930s to wonder what might have been had the combined forces of moral and political reaction not been there to prevent it.

John Lucas

John Lucas is professor of English at Loughborough University.

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Responses to poetry

The Making of the Reader: language and subjectivity in modern American, English and Irish poetry
by David Trotter
Macmillan, £20.00

Some English academics are responding to the challenge of the new linguistic criticism with an intellectual energy so fierce as to be in danger of choking on its own surplus. David Trotter's brilliant but over-charged book runs that risk in its attempt to explain the ways in which poetry "makes" its readers. In the past, criticism has been mainly taken up with the subjectivity of the poet; Trotter follows new thinking with his implicit belief that poetic language is as much a means of creating response as it is a medium for expression, and that the history of modern poetry shows that readers are most conclusively "made" when their customary understanding of words is forcibly disrupted.

Although, in his hurry to relate literary to historical events, one publication to another, Trotter is guided by a trust in synchronicity rather than by particular literary traditions, he does begin with Romanticism, and with the supposed loss of faith in a "Common Reader" whose response could be guaranteed. The Romantic poet was obliged to imagine a "competent reader" whose implied role in the poem would lead the mass of "incompetent readers" to respect for the "marginal" lives led by social outsiders. Wordsworth's "Old Cumberland Beggar" is the first in Trotter's line of liminal figures which takes in Hardy's tramps, Yeats's "Irish Airman" and, eventually, even Eliot's ghosts.

Trotter provides subtle instances of the rhetorical tactics that can direct a reader's appreciation of marginality. Most are to do with the active presence of small words. Wordsworth, for example, relies upon a chain of "pronominal items" ("him", "she", "his") as a way of delaying identification of the beggar so that readers are encouraged to hazard the reference for themselves. Trotter also believes that there has been a tendency in modern poetry towards an "effect of unfulfilled specificity", to which other slight words have contributed. In Eliot, the referential function of "this" and "that" ("this red rock", "that noise") remains undemonstrated, so that readers have to assume, through their own associations, the wholeness which they might imply. For Yeats, important verbal counters are "some" and "all": "some" as in "some last courtier", "all" as in "all that delirium". Their unelaborated presence impresses us with a feeling that the poet can perceive and evaluate as we cannot. Withheld invitations are crucial for the modernist, because "by acknowledging what they specify but omit to name, we shed our accidental and temporary status, and become the readers they were writing for". Thus readers can be made in the image of a poet's authority.

In the interwar years, literary authority was both repelled and seduced by the authority of real politics. One result Trotter calls "anti-pathos"; a reflexive mistrust of the emotions. Ostensibly a cold, impersonal manner of discourse, "anti-pathos" could also serve on propaganda. It linked the ferocious right (Wyndham Lewis) with the battling left (Brecht) and fired Pound's appreciation of fascist radio as a way of conveying the charisma of power to an immense audience. These days the tempting host is the university.

At this point the threads of Trotter's already difficult argument become so thick that he ends each chapter with a précis, as if to remind himself of what he has just said. What he wants to, show, he decides, is how the ambivalence of admired poets (Heaney, Larkin, Hughes and several others) towards their own positions of responsibility has produced a poetry that is based on "the status of the speaker rather than any marginal figure". At the same time, these "declarative" voices have created an audience capable of appreciating their anti-pathetic attitudes. It begins to look as if poets are constrained by their readership after all. Trotter suggests that a narrow insistence upon the "serious reader" has been used to support the conservative tastes of a journal like *Poetry Nation*, and he offers the neatly elliptical idea that an emphasis upon metaphor in school primers may have produced its star pupil in Craig Raine. But the social implications of this circular exchange between institutions and their products may be even more ominous than Trotter can bring himself to admit. If readers really are made, then it's surely essential to preserve a wide democratic space for their creation. The margins now occupied by little presses and shrinking English departments must embrace a plurality if they are to resist a governmental authority whose aim is to deny the "subject" of poetry altogether.

John Stokes

Dr Stokes is lecturer in English at the University of Warwick.

A new volume of unpublished poems by E. E. Cummings, *Etcetera*, has just been published by Norton at £14.95 and £6.95. The editors have selected the poems from a larger body of as yet unpublished and uncollected poems. This book is the latest in the Cummings Typescript Editions which aim to present the texts exactly as the poet created them on his typewriter.

BOOKS

Spatial science

Recollections of a Revolution: geography as spatial science
edited by Mark Billinge, Derek Gregory and Ron Martin
Macmillan, £18.00 and £6.95
ISBN 0 333 27148 3 and 27149 1

Thirty years ago the use of mathematical models in geography was confined largely to cartography and climatology. The 1950s saw the beginning of a period of turmoil – a period which was labelled a little pretentiously as the "quantitative revolution" – in which this use was extended into many other parts of the field.

Given what was happening in the world of mathematics, statistics and computing and the ways in which other subjects from biology to economics were reacting, this movement seems wholly unsurprising. Indeed, I doubt if geography were not going through another of its self-reflective moods that this period of change would have deserved book-length treatment. The bulk of the book consists of recollections from eight geographers who were closely involved in the movement. These are prefaced by a general essay in which the editors speculate on how change within scientific thinking comes about; and two concluding essays reflect on the value or otherwise of what was achieved.

Few autobiographical essays are without delightful asides: I particularly enjoyed the vision of Harold Brookfield struggling with Hartshorne's arguments while the tropical night fell on the New Guinea Highlands. Richard Morrill's glimpses of Seattle, zingly short. Even the index has its touch of humour. Certainly, for anyone already familiar with what happened this will be a fascinating read. But for the bulk of geographers – let alone colleagues in other fields – who might wonder simply what happened and what the benefits of the upheaval were, then this will prove a frustrating volume.

Even if you accept the autobiographical character of the book, then major criticisms remain. First, the avoidance of cross-reference to what was happening in physical geography gives an unbalanced account, for many of the models and methods adopted in human geography were transplanted from the physical side. We simply cannot make sense of what happened without reference to Arthur Strahler at Columbia or W. C. Krumbein at Northwestern (both in geology departments). Their influence on quantitative geomorphology is paralleled by the impact of quantitative ecologists (such as E. C. Pielou and Peter Greig-Smith) on biogeography and settlement studies, or of statisticians (such as M. S. Bartlett and David Kendall) on diffusion studies. New ideas in dynamic climatology came into geography via Kenneth Hare and Leslie Curry. The blinkers which allow us to see geography only as human geography and only as a social science gravely undermine the whole balance of this approach.

This narrowness of canvas is also seen in the divorce of events in academic life from the wider environment of the period. Some of the confident statements that were made about the discipline in the early 1960s reflect a general optimism and confidence typical of so many areas of thought in the Kennedy years. The steady growth of computing power, the torrent of regional data that began to pour out from national and international agencies, all influenced how geographical synthesis could be approached and what could be woven into it. But to study one musical score in isolation is about as revealing as listening only to the tuba during an orchestral performance.

If we are to learn from this reflection on the past, we need a sharper focus on what was happening as well as how and why. Although the roles of individuals or of particular "invisible colleges" in accelerating or retarding change may seem interesting in a self-indulgent way, they are less critical than the substantive questions of gains and losses to which only David Mercer and Alan Wilson address themselves. If the period has a general lesson then it is, as the editors hint, that the most likely effect of an academic revolution is to install a new orthodoxy no less restrictive than its predecessor.

Peter Haggett

Peter Haggett is professor of geography at the University of Bristol.

A Sikkimese coolie woman (1879). From Ian Cameron's *Mountains of the Gods: the Himalaya and the mountains of central Asia* (Century, in association with the Royal Geographical Society, £12.95).

Climatic trends

The Global Climate
edited by John T. Houghton
Cambridge University Press, £27.50
ISBN 0 521 251389

The World Climate Research Programme (WCRP) has developed from the earlier Global Atmospheric Research Programme (GARP), both of which, as parts of the World Climate Programme, have been jointly sponsored by the International Council of Scientific Unions and the World Meteorological Organisation. Although such impeccable credentials do not, of themselves, guarantee a successful and important book, in this particular case the publication fully measures up to the standing of the bodies from which it is derived. Prepared by scientists involved, the intention of this impressive book is to communicate the main aims and lines of research of the WCRP to a wider scientific community.

The atmospheric system is a very complex one indeed, involving a large number of interacting feedback processes which make the mathematical modelling of the system most difficult to schedule effectively. The GARP was concerned with such interactions within the limits of the upper and lower boundaries of the atmosphere, relating the solar radiation input to atmospheric properties, with Earth surface characteristics being considered as defined and fixed. Within this programme, the GARP Atlantic Tropical Experiment (GATE) of 1974 was designed to make detailed observations of atmospheric conditions in that area over several months; and the Global Weather Experiment of 1979 was intended to enhance global weather observations in order to facilitate the modelling of the atmosphere on the largest computers available.

Designed to extend and advance these earlier investigations, the WCRP incorporates all components of the climate system rather than simply the atmosphere alone, considering also the oceans, the cryosphere (the snow and ice cover of the Earth), and the land surface including the biomass within or above it. In addition, three specific research themes have been defined. As the first of these is concerned with the physical basis for long-range weather forecasting on timescales of one or two months, the programme attempts to understand those aspects of atmospheric dynamics and thermodynamics that could facilitate such predictability of large-scale atmospheric circulation regimes.

The second theme is that of interannual variability of climate, investigating the relationships between such year-to-year fluctuations and equivalent variations in the properties and characteristics of the tropical oceans and the overlying atmosphere. The third main theme is concerned with longer-term climatic trends, over periods of several years to several decades or longer, and with climatic sensitivity to often minor changes in the atmosphere-ocean-Earth surface system. Consequently, problems associated with man-induced changes in carbon dioxide concentrations in the atmosphere are critical.

It is in the context of these objectives that this book has been structured and presented. After two introductory chapters, the authors pursue a series of themes: climatic variability; atmospheric circulation models; cloud-radiation relationships; the impact of land surfaces (especially deserts and the cryosphere); inter-relationships with the oceans (four chapters); the biochemical processes; and the carbon dioxide problem. These 13 chapters are written by a distinguished group of international scientists, but their diverse backgrounds have not resulted in a disjointed set of papers. Credit for an integrated and coherent text must surely go to the book's editor, the director-general of the Meteorological Office. Signs of firm editorial control include not only the degree of cross-referencing between chapters and the balance between different sections, but also the provision of ample illustrative material and the full (though obviously selective) lists of references.

This authoritative book is not merely a valuable addition to the literature on global climatic conditions and climatic change, but also an effective and succinct contemporary summary of our present understanding of this highly complex field.

Stanley Gregory

Stanley Gregory is professor of geography at the University of Sheffield and editor of "Journal of Climatology".

Coastal processes

An Introduction to Coastal Geomorphology
by John Pethick
Edward Arnold, £7.95
ISBN 0 7131 6391 7

The fashionable trend of geomorphology during the past 20 years has been to shift attention from form to process, and in some ways it is remarkable that coastal studies have not led the way. Yet, as John Pethick claims, existing books are thin on process studies, and there is undoubtedly a need for a modern synthesis of this type.

Perhaps unwisely, Pethick makes some bold claims for his approach, and at the same time pours some unnecessary scorn on the old ways. He suggests, for example, that coastal classifications have tended to retard the development of a truly scientific coastal geomorphology. The problem is that alongside some fairly mathematical chapters, we find that other topics are less susceptible to this approach. Beach long-shore shape involves the recognition of simple or complex curves, and the separation of beaches which hug the coastline from those which are detached. Even the discussion of currents has to start with the arbitrary separation into two groups, normal to and parallel to the shore. After all the hard words about classification, this is called "analytical simplification".

Five chapters are fully consistent with the aim of the book. These cover waves, wave-induced currents, coastal sediments, coastal sand dunes, and estuaries. Here physical principles expressed in mathematical form are the basis of the presentation. Many students with Advanced-level mathematics will find these chapters useful summaries of modern work in these areas. Curiously, the mathematics is dropped in the chapter on tides, which are dealt with in what the author calls "the diagrammatic explanation". Since this chapter could have been handled in a similar style to the other five, I am puzzled as to why the approach was changed.

In other areas there is too little understanding of the physical processes for the same approach to succeed. In so far as this throws the author back on careful description with an emphasis on processes observed in the field, this does not detract from the approach of the book. The chapters on beaches, on mudflats and salt marshes, and on cliffs and shore platforms fall into this category. One omission is information on rates, for which there are plentiful data, and this would have added a quantitative dimension to these chapters.

A final chapter provides a few examples of applied coastal geomorphology; possibly added at the request of the publisher, this seems half-hearted and in no way tackles the contrast between the engineering and the geomorphological/sedimentological approach to coastal problems. Nor does it take any note of the concepts of hazard or the relevance of coastal planning and management.

The penultimate chapter, on sea-level change – a topic central to any book on coastal process-form relationships – seems scrappy, incomplete, poorly ordered and full of minor errors, suggesting little interest and virtually no awareness of the literature. To produce a book with edge wave equations in chapter three, and yet to be unaware in chapter eleven that eustatic changes are not uniform world-wide, does seem curious. Table 11.1 contains six spelling errors and some very peculiar dates; the discussion of oxygen isotope evidence is flawed; and Bloom's ocean-island diastick concept is introduced without drawing attention to his model of early leading where there is deep water offshore to explain the absence of raised beaches.

Non-mathematicians like myself may begin to wonder at this point whether all of the early chapters are reliable. I suspect, however, that they are. An early second edition should provide the opportunity to tidy and improve these final chapters.

Keith Clayton

Keith Clayton is professor of environmental sciences at the University of East Anglia.

Rock locks

Dynamic Stratigraphy: an introduction to sedimentation and stratigraphy (second edition)
by Robley K. Matthews
Prentice-Hall, £31.30
ISBN 0 13 222109 8

According to the preface, the aim of this much enlarged version of Matthew's book, first published in 1974, is to show students how to approach the stratigraphic record properly and to provide simple models for stratigraphy upon which geologists can build as their profession becomes more complicated.

The introduction, an exceedingly brief account of why we study stratigraphy, contains a section on the present as a key to the past, which deals with vertical and lateral sediment relationships. It might have been more useful, however, if some of the limitations of such a strict uniformitarian approach had been pointed out, since in many instances, it seems that the Recent is mostly a key to the Pleistocene, with the other main geological periods having their own set of keys; and often the past is a useful key to what is happening now or might happen in the future.

Part two offers a crash course in sedimentary petrology (a little on classification, texture and sedimentary structures but with no modern references), a discussion of stratigraphic principles, an account of time-stratigraphic correlation and a chapter on absolute time and radiometric dating. Although some sections are too brief, the review of stratigraphic principles is useful.

Part three, which describes the large-scale framework within which sedimentary formations are deposited, contains chapters on plate tectonics, eustasy and isostasy, and the geological framework of sediment accumulation. Here, cratons, and active and passive continental margins, are discussed with reference to the geological history of North America.

Part four, on sedimentary environments and facies (nearly 200 pages), accounts for about half the book. (Interestingly, some important facies have been excluded, presumably because, as their modern analogues are either poorly developed or difficult to study, it is difficult to use a uniformitarian approach.) Modern environments and sediments are discussed first and the data then summarized into a facies model; and several ancient examples are presented, mostly from North America.

Although the treatment of some of the facies is good, that of others is superficial. The attempt to present generalized facies models falls down in several instances but particularly with regard to carbonates, where only the classic shelf model is presented. The alternative, and now topical, ramp model for carbonates, with the Arabian Gulf as a modern analogue, is not considered. However, the description of some of the ancient sequences provides much useful information on the geological history of North America.

Part five, which attempts to review plate motions, sea-level changes and polar ice-cap fluctuations throughout the Phanerozoic, contains a chapter on the Quaternary as the key to the past. However, this is mostly about Pleistocene glaciation and the associated climatic cyclicity. This recent glacial episode, which some people think has not ended, is the reason for the often poor fitting of the modern key to past locks. The concluding chapters on the Tertiary, Mesozoic and Palaeozoic provide all too brief summaries of major plate tectonic and glacial events. Moreover, there is virtually no mention of the Precambrian throughout.

Although Matthews's book treats stratigraphic principles in a satisfactory manner, sedimentology students would be advised to go elsewhere. Moreover, as much of the stratigraphical background is covered elsewhere and as stratigraphy in Britain is mostly taught period by period, rather than by principles, the book's usefulness is likely to be rather limited.

Maurice Tucker

Maurice Tucker is lecturer in geological sciences at the University of Durham.

BOOKS

Accepting Pascal's wager

Superior Beings: If they exist, how would we know? Game-theoretic implications of omniscience, omnipotence, immortality and incomprehensibility
by Steven J. Brams
Springer, DM 32.00
ISBN 3 540 90877 3

It has been said that philosophers can be divided into two classes: those who believe that philosophers can be divided into two classes and those who don't. Brams's unusual book focuses upon the single issue most likely to split them: whether or not there exists a supreme being (affectionately referred to as "SB" by the author).

The amount of circular discussion of this topic down through the ages is depressingly large. Whether or not Brams's approach to this question proves popular, it will not detract from the fact that he has introduced a fundamentally new idea into a study that has been pursued for millennia and he has succeeded in shifting some problems from the realm of metaphysics into the world of mathematics, where all their consequences can be worked out systematically.

Brams, who is professor of politics at New York University and known for his work on preference voting systems, argues that it is possible to formulate various questions regarding the existence and *modus operandi* of a deity together with issues like free-will in simple mathematical terms. This mathematical attack uses game theory, a weapon that has already been successfully deployed in other studies – notably economics and evolutionary biology, where multiple choices and strategies are available.

Brams asks: if there exists a superior being possessing qualities of omniscience, omnipotence, immortality and incomprehensibility, how would such a being interact with finite mortals like ourselves in situations where a variety of actions and reactions are available to both parties. These games can be formulated precisely and optimal strategies for both players calculated. The idea then is to try to detect the existence of a supreme being by discovering whether observed events are consistent with the presence of such an adversary adopting a logically optimal strategy.

The type of interaction that can be analysed using game-theoretic methods is typified by Pascal's wager – that God exists or does not exist – which Brams treats in some detail. If we believe that God exists and He does, the reward is eternal happiness. If we believe that He exists and he doesn't, nothing is lost; and the same is the case if we disbelieve and He doesn't exist. If we disbelieve, however, that He exists and He does, we are damned for eternity. Thus, we have everything to gain and nothing to lose by wagering that God exists.

By first using two-person game theory to discover the optimum strategies of both superior being and mortal, Brams is able to determine what the stable equilibrium outcomes must be, if they exist. He goes on to consider a number of extensions of these basic tableaux. In particular, he investigates the consequences of omniscience on the part of the supreme being and demonstrates the surprising fact that omniscience can turn out to be a handicap for a player involved in a game of strategy with a mortal opponent. Another generalization from other game-theoretic applications is to allow a sequence of responses by each player to the other's moves and investigate what the long-term stable strategies must inevitably become. An amusing result of this example is that it turns out that a mixed probabilistic strategy can be optimal for the supreme being. Brams offers this as a rational explanation for a deity's apparent arbitrariness in behaviour over a long time and even the occasional injustice – a sort of mathematical existence proof of the problem of evil.

What is one to make of all this? Although it certainly makes for entertaining and stimulating reading, some of the arguments are long and complicated, primarily because these are explained in words rather than through mathematical equations. The only mathematics used explicitly in the text is some simple two-person game theory, explained as the story proceeds. Nevertheless, as with any logical analysis it is to the axioms and initial assumptions that we must look in order to evaluate the credibility of its conclusions.

One assumption that is questionable is whether mortals do always act rationally, rather than emotionally or cooperatively or mistakenly. Throughout Brams's analysis, which harks back to his analysis of interactions between Yahweh and the Jews in an earlier book on games in the Old Testament, the question of human fallibility is never examined. Also, an element of trust rather than strategy for tactical supremacy might enter, leading to a deviation from minimax options. We might wonder to what extent a mortal's choice of strategy might be influenced by other things he knows about the superior being or other things he is shown by him: is a two-person game really appropriate when decisions have to be made by an individual who interacts, perhaps tactically, with a large number of other mortals?

There may also be a fallacy in treating an entire race or species as a single individual. Certainly this type of problem has arisen in what, in many ways, is an analogous methodological study: the question of whether superior extraterrestrial beings exist. In trying to decide whether or not such beings would choose to reveal themselves to us or treat us as members of a protected galactic nature reserve (such extraterrestrial superior beings are always regarded as benevolent), many have fallen into the trap of evaluating the extraterrestrials' strategy as though they were a single individual rather than a society containing a diverse spectrum of opinions.

The final chapter contains some intriguing discussion of undecidable games. These arise when, in a two-person game, the mortal player cannot decide whether the other player is superior by studying his moves. The use of the term "undecidable" here is technically different from its other famous usage in mathematics in connexion with Gödel's theorems on the inevitable logical undecidability of some statements based on arithmetic, although its import is similar. Even if we had complete information concerning the results of an interaction between ourselves and "something else", we might be unable to identify the existence of a supreme being by evaluating whether or not our fates turn out to be consistent with play against an omniscient optimal strategy. When the game is undecidable, none of the outcomes can be uniquely ascribed to the being's superiority.

Lest one is despairing of this uneasy amalgamation of the mathematical and the religious it is a good moment to recall that Gödel in effect showed that if by a religion we mean a system of thought that contains unprovable statements that can be supported only by faith, then not only is mathematics a religion but, moreover, it is the only one that can prove itself to be one.

John Barrow

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Algorithm craft

Handbook of Algorithms and Data Structures
by G. H. Gonnet
Addison-Wesley, £12.95
ISBN 0 201 14218 X

Common Algorithms Programmed with Programs for Reading
by David V. Moffat
Prentice-Hall, £8.50
ISBN 0 13 152637 5

Of these two books, which are addressed to practitioners at opposite ends of the software spectrum, the first is aimed at seasoned computer scientists and professional programmers, whereas the second is intended for aspiring novices on the threshold of initiation into the demanding crafts of algorithm construction and implementation. Neither is entirely successful, which is only to be expected of works, one of which is so ambitious in scope and the other so fundamentally important in purpose.

Gonnet's book is a notable attempt to provide a wide-ranging guide to the best algorithms currently available for use in a number of applications. It is thus intended to be as indispensable a reference work for the computer scientist as a handbook of mathematical functions is for the applied mathematician. Unfortunately, its title may mislead the casual browser into expecting more from the book than it can deliver, since many significant computing themes are omitted and others are given only cursory treatment. For example, neither computational geometric algorithms nor advanced graphical algorithms are considered and the discussion of arithmetic algorithms in the final chapter is, to say the least, sketchy. However, the exhaustive coverage given to sorting, searching and selection algorithms is exceptionally good and should be of invaluable assistance to those interested in data processing or in database construction and use.

Among the considerable strengths of the book are, first, the use throughout of van Wijngaarden grammars in the definition of data objects – indeed, this is a most desirable move towards formality in data structuring, akin to the adoption of BNF in the definition of programming languages. Second, the provision, in high-level languages, of complete implementations of nearly all of the algorithms discussed. Third, the inclusion of meticulously detailed analyses of the expected performance of the algorithms, and of copious numerical evidence in support of the theoretical estimates (a very refreshing feature). Finally, the comprehensive list of references is proof of the author's industry and thoroughness and should provide research workers with an unrivalled introduction to the literature.

It was surely a mistake, however, to use two languages, Pascal and C, for the implementation of the algorithms. The effects of this decision can be annoying for the reader who, if reluctant to consult the appendix, is forced repeatedly to adjust mentally to the frequent change of programming style. The deficiencies of Pascal are not sufficiently severe to warrant such a drastic step (recommended, for example, by Hoare) and I much regret that Gonnet's book should prove to be a frequently consulted addition to the literature.

Moffat's book is intended as a vade mecum for those being introduced to algorithm construction and programming through the medium of Pascal. As knowledge of Pascal is assumed, this leaves the author free to concentrate on the clear presentation of realistic and interesting problems and their solutions without having to digress in order to introduce and discuss new language features. Moreover, he has had the imagination and wisdom to concentrate his efforts on building up the reader's vocabulary of basic algorithms by providing a rich collection of those operations most frequently used in their construction. Throughout, the incremental development of solutions to problems of increasing complexity in terms of solutions to simpler problems is both admirable and convincing.

The book is distinguished by the structural elegance and the quality of documentation of the programs, with a welcome insistence on the provision of detailed input-output specifications and other crucial annotations. The many carefully selected exercises are exceedingly searching and are designed to lead the reader to an awareness of the advantages of expressing the properties of programs in a formal way. For the beginner, the book provides a balanced and nourishing diet with much to mull over, savour and digest.

Computer scientists would do well, however, to recall the Pauline admonition and exhortation regarding the timely abandonment of childish modes of thought. Blind adherence to the von Neumann computational model with its concomitant emphasis on the use of imperative programming languages is symptomatic of a regrettable infantilism. Related to this is the unfortunate tendency – and Moffat's book errs in this respect – to give undue weight to the data types which a particular language provides rather than to regard these merely as sets of primitive objects from which representations of abstract objects may be forged.

Maurice Clint

Maurice Clint is lecturer in computer science at The Queen's University, Belfast.

Mid-thirteenth century illustration of St Bernard, inspired by God (the hand from the cloud). From Colin Platt's *The Abbeys and Priories of Medieval England* (Secker & Warburg, £15.95 and £9.95).

Uses for plasticity

Engineering Plasticity
by W. Johnson and P. B. Mellor
Ellis Horwood: Wiley, £15.00
ISBN 0 85312 346 2

Applied Elastoplasticity of Solids
by T. Z. Blazynski
Macmillan, £20.00 and £11.00
ISBN 0 333 34544 5 and 34545 2

When loads are applied to metallic components, stresses are generated within the material which lead to strains; the component deforms. In the first instance the deformation is elastic, the stresses and strains disappear when the load is removed, and the component recovers its original shape. However, if a critical stress level – the yield stress – is exceeded, then plastic deformation is produced. If the load is now removed, the component retains some of the deformation, its shape has been changed, and in certain circumstances a residual state of stress remains.

Plastic deformation is most obvious in the field of metal forming. In order to make products ranging from saucepans to battleships, we are essentially concerned with imposing significant plastic deformation on the base metal. However, interest in plastic deformation is not restricted to mechanical and production engineering. Both civil and chemical engineers need to be familiar with the response of structures and pressure vessels in the plastic range. It is important therefore that all students in these and other branches of engineering are conversant with the plastic behaviour of metals. None the less, a great deal of design is based on elastic methods. Structures and components are designed so that they remain in the elastic range when exposed to their working loads. Although this is sometimes essential from the point of view of serviceability (for example, in designing a measuring instrument), there are many instances in which a degree of plastic deformation is advantageous. Residual stresses, which are created by the interaction between elastic and plastic deformation, can produce conditions which lead to more efficient use of materials.

Johnson and Mellor's book is a classic in the field of plastic deformation. Appearing first in 1962 as *Plasticity for Mechanical Engineers*, it is now established internationally as one of the leading engineering texts on plasticity. It presents the concepts and methods of analysis in a manner which can be readily understood and related to practical situations. After presenting the essential elements of the analysis of stress and strain in the first six chapters, the authors discuss a wide range of applications, falling broadly into two areas: mechanical working and metal forming.

Over seventy worked examples are provided and the book contains extensive references which make it invaluable not only for undergraduate teaching but also for postgraduate and research purposes. It will clearly retain its pre-eminence in the literature for many years to come.

Blazynski's book, which is less compendious and principally intended for final-year undergraduates, is aimed at providing an understanding of the state of the art in the area of elastic-plastic analysis, emphasizing where appropriate the advantages of elastic-plastic design in preference to purely elastic approaches. The pattern of the book is similar in many respects to the first ten chapters of *Engineering Plasticity*. Apart from passing references to extrusion and tube piercing, there is very little in the book on metal forming.

The main emphasis is on the elastic-plastic deformation of components and structural elements. Many of the standard examples of plastic instability – binding of beams and plates, torsion of shafts and the behaviour of rotating systems – are presented, each chapter having worked examples and problems to reinforce the various topics. The chapter on bending is notable for the inclusion of recently published work on the spring-back of plates and an example of the response of beams to dynamic loading. And in the most comprehensive chapter, on thick and thin-walled pressure vessels, there are some novel inclusions, a particularly interesting topic being the residual stresses in explosively fabricated duplex tubes.

The range of topics is well chosen to illustrate the significance of plastic deformation in the design of mechanical components and systems. However, as the introductory chapters are only intended to serve as a refresher course in the fundamental aspects of elastic-plastic analysis, they would need to be supplemented by other material before proceeding to the applications.

As the two books are to some extent complementary, they should offer valuable assistance in the teaching of this important subject.

S. R. Reid

S. R. Reid is Jackson professor of engineering at the University of Aberdeen.

Chairs

Dr Geoffrey Sampson (above) has been appointed to the chair of linguistics and phonetics at the University of Leeds. Dr Sampson is currently reader in the department of linguistics and modern English language at the University of Lancaster.

Dr George Russell, at present senior lecturer in the department of electrical and electronic engineering at Heriot-Watt University, has been appointed to a new chair within the department. Since 1981 Dr Russell has been closely associated with the development of the university's digital systems laboratory.

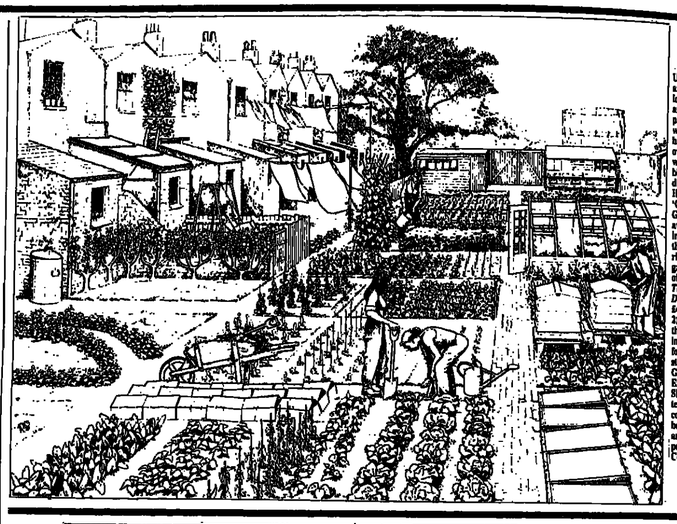
The following appointments to chairs have been made in the University of London: Allan Buckwell, currently lecturer in agricultural economics at the University of Newcastle upon Tyne, to the chair of agricultural economics at Wye College; Dr Alan Clements, currently principal scientist in the Shell Biosciences Laboratory, to the chair of medical entomology at the London School of Hygiene and Tropical Medicine; Dr Charles S. F. Easmon, to the Fleming Chair of medical microbiology at St Mary's Hospital Medical School; Dr Michael Hobsley, to the chair of surgery at the Middlesex Hospital Medical School; Dr James E. T. Jones, to the Courtauld Chair of animal health and production at the Royal Veterinary College; Mervyn King, currently Esmee Fairbairn Professor of investment in the University of Birmingham, to the chair of economics at the London School of Economics; Dr Keith McAdam, currently associate professor of medicine in the division of experimental medicine, geographic medicine and allergy at Tufts University School of Medicine, Boston, to the Wellcome chair of clinical tropical medicine at the London School of Hygiene and Tropical Medicine; Dr John E. Midwinter, currently special division head of the Optical Communications Technology Division at the British Telecom Research Laboratories, Martlesham, to the British Telecom chair of optoelectronics; Dr Peter Robinson, currently professor of statistics and operational research at the University of Surrey, to the chair of econometrics at the London School of Economics; Dr Rachel Rosser, reader in psychiatry at Charing Cross Hospital Medical School, to the chair of psychiatry at University College London and the Middlesex Hospital Medical School; Dr William Sims, to the chair of microbiology in relation to dentistry at University College; Dr Richard Wood, currently clinical reader in surgery at the University of Oxford, to the chair of surgery at St Bartholomew's Hospital Medical College.

Mr Gerald Cohen, reader in philosophy in University College, London, has been appointed to the Chichele Professorship of social and political theory in the University of Oxford. Professor Richard Swinburne, currently of the University of Keele, becomes Nolloth Professor of the philosophy of the Christian religion.

Grants

LONDON, ST GEORGE'S HOSPITAL MEDICAL SCHOOL: Dr M. J. Clemens, £84,972 from Cancer Research Campaign (regulation of mammalian protein synthesis); Professor J. S. Kelly, £52,309 from MRC (serotonergic neurones); Dr. A. C. Dolphin, £52,082 from MRC (pertussis toxin); Dr J. A. Firth, £49,580 from British Heart Foundation (permeability and ultrastructure); £33,460 from Cancer Research Campaign (behaviour of migratory embryonic cells); Dr D. C. Bennett, £33,648 from Cancer Research Campaign (mammalian cell differentiation); Dr T. W. Stone, £33,170 from Wellcome Trust (synaptic transmission in cerebral cortex); Dr M. Burke, £31,898 from South West Thames Regional Health Authority (histological diagnosis of liver cell tumours); Professor J. Hermon-Taylor, £31,699 from Cancer Research Campaign (human pancreatic oncogenes); Professor J. S. Jenkins, £30,143 from Cancer Research Campaign (development and growth of pituitary tumours); Dr R. W. Horton, £24,084 from Wellcome Trust (brain neuro-transmitter receptors in suicide victims); Dr E. D. Bennett, £22,000 from ICI plc (pharmacodynamic effects); Professor D. J. Bicknell, £20,000 from South West Thames Regional Health Authority and Spastics Society (evaluating changes in services to mentally handicapped people); Dr L. Hudson and Dr R. Millard, £19,184 from Cancer Research Campaign ('T' lymphocyte mediated suppression); Dr J. R. Griffiths, £18,245 from Cancer Research Campaign (studies of tumours by NMR); Dr M. Fisher, £14,557 from Cancer Research Campaign (DNA-gyrase and eukaryotic ATP-dependent DNA topoisomerases); Dr C. C. Wylie and Dr B. H. Anderton, £13,979 from Cancer Research Campaign (cytoskeleton of normal and neoplasic cells in human colon); Dr L. Hudson, Dr H. Hughes and Mr J. Pepper, £12,900 from MRC (cytokinin cell irradiation); and St James's Hospital, Leeds (study of LH with abnormal biological activity).

OPEN: Mr M. Richardson and Miss M. Hartnoll, £65,000 from the Leverhulme Trust (distance learning materials); Dr D. A. Armstrong and Mr W. Mayan-Whyte, £20,000 from Engineering Industry Training Board (video film and related notes on Work Change Management Project); Dr S. A. Drury, £5,000 from Environmental Remote Sensing Applications Consultants Ltd (video film of geological applications of remote sensing); Professor N. Gowar, £5,000 from the Mathematical Association (in-service courses for mathematics teachers); Dr M. Elliott, £1,065 from Nuffield Foundation ("United Irishmen; the first phase, 1795–1800"); Professor A. G. Parkinson, £4,000 from Rolls Royce Ltd (training course in vibration); Mrs M. Jack, £15,000 from Social Work Services Department, Scottish Education Department (training strategy for members of children's panels).



Urban allotments are rarely as idyllically pastoral as this. Bounded partly by Metropolitan Police property, watched, shady branches watch over, encroaching weeds the subject of bitter, year-long disputes. Cull at Harper's desk, 'Collected by Gardener' has avowedly simple image, overturning the traditional metaphoric rig of terrace-bed gardens. Not sure of the drawing in *The Education of Dexter* (Aurora, £4.95, 0 9508 1961 2) here as pseudo-Oleg Kerper's images are more forceful, drawing strongly from German Expressionism and Situationism. Its text is a conversation between Hope and the American poet Adam Cornford.

NOTICE BOARD

Award

Professor Kenneth Jack, professor of applied crystal chemistry at the University of Newcastle upon Tyne, has been awarded the 1984 Prince of Wales Award for Industrial Innovation and Production. He shares the prize with Dr John Lumby of Lucas Cookson Syalon Ltd for their work on a new engineering ceramic called 'Syalon'.

Two new annual book awards have been announced by the publishers of the *British Journal of Educational Studies*. Henceforth to be known as the Standing Conference in Education Book Prizes, the awards of £500 and £300 will be made each autumn for those books considered most significant by a panel of five judges (for 1984: Dr T. R. Bone, Professor Graeme R. Batho, and Professors W. A. L. Blythe, M. D. Sutherland and Raymond Wilson). For the first year of the awards, the trawl will extend back over the previous two years. For further information, contact Dr T. R. Bone, Jordanhill College of Education, 76 Southbrae Drive, Jordanhill G13 1PP.

Promotions

KENT: Senior lecturerships: Dr H. St C. Cunningham (history); Dr J. A. Creighton (chemistry); Mr R. F. Dis-[illegible] (mathematics); Dr A. M. Thirlwell [illegible]; Dr John Wunsbrough (Semitic studies, School of Oriental and African Studies); Dr Robert Weiss (viral oncology, Institute of Cancer Research). **Readerships:** Dr Nigel Holder (anatomy, King's College); Dr Roderick Oliver (medical oncology, St Bartholomew's Hospital Medical College); Dr Christopher Bayly (mathematics, Imperial College); Dr Harvey Flower (materials science, Imperial College); Dr Philip Hull (applied mathematics, Imperial College); James Hooker (Greek and Latin, University College); Dr Michael Berney (quaternary palaeontology, University College); Anna Lipschy (Italian, University College); Dr Richard Munton (geography, University College); Dr Stuart Peracek (medical studies, Royal Free Hospital School of Medicine); Dr Newrick Reay (physics, Imperial College); Dr Frederick Sanders (periodontology, London Hospital Medical College); Dr John Yates (chemical technology, University College).

LEEDS: Readerships: Dr Janet Wolff (sociology); Mr D. R Barnes (education); Mr D. L. Bmith (physical chemistry); Dr S. Wainer (pure maths); Dr A. Chadwick (pure and applied zoology); Dr A. V. Holden (physiology).

LONDON: Personal professorships: Dr Richard Clymo (ecology, Westfield College); Dr Peter Dunnill (biochemical engineering, University College); Dr William Eatock-Taylor (ocean engineering, University College); Michael Freeman (English law, University College); Dr David Clingell (cell biology, Middlesex Hospital Medical School); Deepak Kumar (lab (political economy, University College) Dr Shula Marks (Commonwealth history, Institute of Commonwealth Studies); Dr Harry Norris (Arabic and Islamic Studies, School of Oriental and African Studies); Dr David Olive (theoretical physics, Imperial College); Dr Paul Aguiter, previously senior lecturer in the department of biological sciences, becomes reader in cell biology.

Appointments

Lord McFadzean of Kelvinside, director and former chairman of ICI, has been appointed chairman of the Council of the University of Buckingham, succeeding Mr Edgar Palmer-Tomkinson.

Mr Malcolm Johnson, senior lecturer (reader) at the Policy Studies Institute, has been appointed director of the Open University's Health and Social Welfare Programme.

Mr Alistair Grant, managing director of Argyll Foods, has become visiting professor of retorting at the University of Stirling.

The Royal Geographical Society has elected as its new president Sir Gordon Bishop, former chairman of British Steel. Mr McConnel and previously deputy secretary of the Ministry of Agriculture. Sir George succeeds Sir Joseph Fuchs.

Events

There is to be a conference on 'Self and Cultural Change in Brazil' at St Antony's College Oxford on July 11 and 10. For full details, ring Oxford 59651.

In a bid to free contemporary theatrical work from its 'Europeocentricity', the 1984 Essex Sociology of Literature conference will be examining "Europe and its Others", the relationship between Europe and other cultures. Speakers will include Hamid Dabashi on 'The question of authority', Anour Abdel Malek on 'The Orient Reinvent', Edward Said on 'Orientalism Reconsidered' and Gayatri Spivak on 'Overdetermination of Imperialism'. For full details, contact the Essex office, University of Essex on 0206 863286.

Open University viewing

Saturday July 7

BBC1
6.20 Geneties. Genetic Manipulation of wheat (S399; prog 5).
6.45 Computer Based Information Systems. The user and the data base (M352; prog 6).
7.10 Statistics in Society. Which test to use (MDST242; prog 5).
7.35 The Handicapped Person in the Community. Like other people (P251; prog 5).
8.00 Curriculum in Action. What did I learn? (P934; prog 6).

BBC2
6.20 Ecology. Arboldale: a limestone valley (S323; prog 5).
6.50 Materials Processing. Pressure die-casting (T352; prog 8).
7.15 Studies in Pure Mathematics. Covering surfaces (M333; prog 6).
7.40 Art in Italy, 1460-1580. The Palazzo Farnese, Caprarola (A352; prog 7).
8.05 Education for Adults. Learning in Groups (E355; prog 1).
8.30 Arts Foundation course. Images of the Holy (A101; prog 20).
8.55 Introductory Electronics. Digital Systems (T283; prog 7).
9.20 Ethnic Minorities and Community Relations. To help the Mosher Company (E354; prog 1A).
9.45 Systems Organisation: The Management of Complexity. Trading on uncertainty (T243; prog 7).
10.10 Computing and Computers. New systems for old (M252; prog 9).
10.35 Personality and Learning. Self-Concept (E201; prog 11).
11.00 Society, War and media (U202; prog 2).
11.25 Microeconomics. The Galbraithian Thesis (D222; prog 5).
11.50 Business Economics. Evaluating a merger (D324; prog 6).
12.15 Reading Development. A matter of form (PE231; prog 6).
12.40 Contemporary Issues in Education. Adult literacy: the Cape Verde Experience: 1 (E200; prog 19).
13.05 Introduction to Pure Mathematics. Flows (M203; prog 19).
13.30 History of Mathematics. A time of change – the calculus (AM289; prog 7).
13.55 Fundamentals of Human Geography. The gravity model (D208; prog 11).
14.20 To be announced.
14.45* Modern Art and Modernism. Figures of authority, ciphers and regression (A315; prog 1).

RADIO 3 (VHF)
6.55* Science foundation course. An evolutionary window (S101; prog 10).
7.15* Maths foundation course. Foundation maths 10 (M101; prog 10).
23.20* Arts foundation course. Rudolf Otto and the rational and the non-rational in religion (A101; prog 26).
23.45 The 19th Century Novel and its Legacy. American Innocence (A312; prog 11).

Sunday July 8

BBC1
6.20* Geology. Geology: interpreting sediments (S236; prog 10).
6.45 Industrial Relations. Us and Them (PT281; prog 8).
7.10 Control Engineering. A control System Design (T291; prog 5).
7.35 Conflict and Stability in the Development of Modern Europe. Essen in the Third Reich (A309; prog 5).
8.00 Telecommunication Systems. Television (T321; prog 11).
8.25* The Nature of Chemistry. Photoelectron Spectroscopy (S304; prog 20).

BBC2
6.20 Principles of Chemical Processes. Kinetics of a gas reaction (ST294; prog 11).
6.50 Design Processes and Products. Learning from the future (T263; prog 6).
7.15 Understanding Space and Time. A matter of geometry (S356; prog 11).
7.40 Management Issues in Post Compulsory Education. A matter of course (E324; prog 6).
8.05 Social Psychology. Analysing Interaction 2 (D305; prog 11).
8.30* Science foundation course. Dawn of Man (S101; prog 20).
8.55 Social Sciences foundation course. Conflict 2: not the news (D102; prog 22).
9.20 Maths foundation course. Codes (M101; prog 10).
9.45 State and Society. Title to be announced (D309; prog 8).
10.10 17th Century England. Architecture & Society 5: peace to corrupt (A205; prog 11).
10.35* Rome: the Augustan Age. Gallia Narbonensis (A305; prog 6).
11.00 Society, Education and the State. The way to work (E353; prog 6).
11.25 Mathematical Models and Methods. Simultaneous differential equations (MST204; prog 22).
11.50 Biology: Form and Function. A fish out of water (S202; prog 21).
12.15* The Earth's Physical Resources. Water for Jordan (S236; prog 10).
12.40* The 19th Century Novel and its Legacy. Mark Twain's Huckleberry Finn: an ironic history of America (A312; prog 10).
13.05 Modelling by Mathematics. Natural numbers (TM381; prog 6).

RADIO 3 (VHF)
6.55 Modern Art and Modernism. The Uhde and Kahnweiler Auctions. 1921–23 (A315; prog 2).
7.10 Personality and Learning. Self Concept (E201; prog 11).
7.35 Social Sciences foundation course. Grapevine (D102; prog 11).
7.50 State and Society. Title to be announced (D309; prog 5).
7.35 Management and the School. Issues: a hospital school (E323; prog 3).

Monday July 9

BBC2
6.00* Microeconomics. The Galbraithian Thesis (D222; prog 5).
6.30 To be announced.
6.55* Maths foundation course. Codes (M101; prog 10).
7.20* Ecology. Arboldale a limestone valley (S323; prog 5).
7.45* Materials Processing. Pressure die-casting (T352; prog 8).
17.10* Contemporary Issues in Education. Adult Literacy: the Cape Verde experience: 1 (E200; prog 19).
23.20 Shakespeare. Shakespeare's Globe (A361; prog 10).
23.55* Fundamentals of Human Geography. The Gravity model (D208; prog 11).

RADIO 3 (VHF)
6.55* Science foundation course. Analysing the Analyses (2) (S101; prog 11).
7.15* Arts foundation course. Pastoral and anti-pastoral (A101; prog 21).
23.20 Man's Religious Quest. A Muslim testimony (AD208; prog 16).

Tuesday July 10

BBC2
6.05 Modern Art and Modernism. Beckmann (A315; prog 21).
6.30* Art in Italy 1460–1580. The Palazzo Farnese, Caprarola (A352; prog 7).
6.55* Biology: Form and Function. A fish out of water (S202; prog 21).
7.20 Science foundation course. Rabbits and chalk grassland (S101; prog 21).
7.46* Genetics. Genetic Manipulation of wheat (S399; prog 10).
17.10* Management Issues in Post Compulsory Education. A matter of course (E324; prog 6).
23.30* Personality and Learning. Self-concept (E201; prog 11).
23.55 The Nature of Chemistry. The GC/MS Link-Up (S304; prog 21).

RADIO 3 (VHF)
6.15* The 19th Century Novel and its Legacy. American Innocence (A312; prog 11).
23.20 The Enlightenment. Expression in Classical music (A204; prog 21).

RADIO 4 (VHF)
23.30 Open Forum – 21. An information programme for OU students.

Wednesday July 11

BBC2
6.05* 17th Century England. Architecture & Society 5: peace to corrupt (A205; prog 11).
6.30* Rome: The Augustan Age. Gallia Narbonensis (A305; prog 6).
6.55* Modelling by Mathematics. Natural Numbers (TM381; prog 6).
7.20 Arts foundation course. Harris Tweed (A101; prog 21).
7.45* Industrial Relations. Us and them (PT281; prog 8).
17.10* Reading Development. A matter of form (PE231; prog 6).
23.30* Studies in Pure Mathematics. Covering Surfaces (M333; prog 6).
23.55* Ecology. War and the Media (U202, prog 2).

RADIO 3 (VHF)
6.30* Open Forum – 21. Information programme for OU students.
23.30* Social Sciences foundation course. Grapevine (D102; prog 11).

RADIO 4 (VHF)
23.30 Principles of Chemical Processes. Rates of simultaneous reactions (ST294; prog 4).
23.55* Management and the School. Issues: a hospital school (E323; prog 5).

Thursday July 12

BBC2
6.05* Introduction to Pure Mathematics. Row (M203; prog 19).
6.30* History of Mathematics. A time of change – the calculus (AM289, prog 7).
6.55* The Earth's Physical Resources. Title to be announced (S236; prog 9).
7.20* Social Sciences foundation course. Conflict: not the news (D102; prog 22).
7.45* Control Engineering. A control system design (T391; prog 6).
23.30* The Handicapped Person in the Community. Like other people (P251; prog 5).
23.55* Social Psychology. Analysing Interaction 3 (D305; prog 11).

RADIO 3 (VHF)
6.35 Industrial Relations. The Private Sector (PT281; prog 8).
23.20* Modern Art and Modernism. The Uhde and Kahnweiler Auctions 1921-23 (A315; prog 21).
23.40 An Ageing Population. Home support (P851; prog 5).

RADIO 4 (VHF)
23.30 Art and Environment Words on wine (TAD292; prog 11).
23.50* Science foundation course. Analysing the Analyses (D209; prog 5).

Friday July 13

BBC2
6.05* Mathematical Models and Methods. Simultaneous differential equations (MST204; prog 22).
6.30* State and Society. Title to be announced (D309; prog 8).
6.55* Design Processes and Products. Learning from the future (T263, prog 6).
7.20* Understanding Space and Time. A matter of geometry (S356; prog 11).
7.45* Principles of Chemical Processes. Kinetics of a gas reaction (ST294; prog 11).

RADIO 3 (VHF)
6.15* Man's Religious Quest. A Muslim testimony (AD208; prog 16).
6.30* The Enlightenment. Expression in classical music (A204; prog 21).
23.20* Personality and Learning. Self Concept (E201, prog 11).
23.40 20th Century England. Postwar: part 1 (A203; prog 11).
Repeated programme

Education for employment

The month of uncertainty

July is the month when college principals begin to prepare for expansion or retraction. This is the time when budgets have to be prepared, when courses have to be thought about, when student admissions have to be guessed at and when estimates of income are worked out.

This year colleges as well as their local authorities face uncertainties they have not come across before. They will have to deal with them under the close scrutiny of employers, parents and schools. They do so at a time when the age group entering further education is smaller, when the first year success of the YTS is beginning to be recognized, when there is a drive towards relatively low college charges for the off-the-job YTS component and when the White Paper on training casts a threatening shadow over the future of control and funding.

The response from FE is coloured by attitudes about expenditure on the part of local authorities which will lead some to leave their budgets alone, others to press for a larger YTS off-the-job course income and others still to expect that the Manpower Services Commission will make larger payments overall.

In reality perhaps the majority of authorities may feel that they have been left to battle for whatever they can get from individual managing agents but not in the market of inter-college rivalry. They may have wanted to stand by the local authority association line of a 10 per cent or 15 per cent increase or an enhancing of hourly charges. Nevertheless by now they are likely to have found that employers recognize no extra other than that of inflation.

Decisions about the 1985/86 budget are of crucial importance: they have to cover the last term of an academic year which goes beyond the much-debated YTS subsidy-year of 1984/85 and they may have to cover the first effects of the White Paper: any withdrawal of funding which might have been notionally earmarked for further education in the Rate Support Grant is bound to receive an unfavourable response. The choices are to cancel individual courses and lay off certain members of staff, to go for more intensive teaching or to give up YTS.

Not one of these is a comfortable choice – and discomfort is heightened when FE takes a look at how it is handling changes in other directions – particularly in curriculum. In contrast to the effects of expenditure policies and local authority budgets, colleges have to look to their own resources and to their own attitudes where curriculum is concerned. Are they prepared to regard themselves as what the Further Education Unit describes as experimental colleges? In other words, are they ready to look at the impact of total changes? If not, are they ready to take their place as part of a regional curriculum base (RCB), is another approach both to the networking of curriculum initiatives and to the sharing of experience?

This September the RCB scheme enters its second year in some parts of the country and in others its third (post pump-priming) phase. At present it seems likely that where regional schemes are based on advisory consortia they will be in a strong position in the process of examining and of validating college courses, then the expansion of curriculum innovation and a parallel movement in staff development will be taken in its stride.

Elsewhere the recognition by colleges that they need seriously to enter the field of curriculum development will be slow or partial. And local authorities as well as Regional Advisory Councils will be diffident in pressing for curriculum changes, not only because authorities and RACs lack standing in the internal affairs of college planning but also because the lead given by the FEU and others is often thought to be addressed to colleges.

Nevertheless, it will be crucial that the preparation and implementation of college and authority academic plans for FE should succeed on lines which will satisfy the demand not only for greater clarity of pedagogic aims but also in order to provide a better basis for costings in response to the pressures of both the Audit Commission and the value-for-money lobby.

Pedagogy and economy will never sit too comfortably alongside each other. Yet will either be able to respond with first-time clarity to the demands of two other programmes. One of these is the Technical and Vocational Education Initiative, making its first demand on colleges in the third year of the first wave of schemes in September 1985. Alongside this will come the training schemes for the Certificate of Pre-Vocational Education (CPVE). Colleges which are involved in Regional Curriculum Base strategies for CPVE are likely to change their approaches to course planning and staff development quickly and markedly.

Three other influences cannot be ignored: Accredited Training Centres already have a considerable potential in offering training for lecturers and teachers involved in a variety of MSC schemes. Will they alter the bias, style, method or direction of FE training? Second, the best of the ITECs are making a distinctive mark on day release training schemes in information technology. Again the question to be faced is that of how much custom they will draw off from FE colleges. Third, the Skillcentres: these are required to deliver a precisely defined course of training to match specific employer specifications. Financially they have at least to break even. Skillcentres are not widespread, but where they exist they can give an example to other providers of training.

The combination of these pressures for change places FE in a position which it did not contemplate 12 months ago. Had colleges not begun very quickly to adapt themselves we would by now know, from the one very obvious source, namely the YTS trainees. What emerges is that YTS is [illegible] off-the-job training.

But colleges do make it clear that they want their contribution to be job-related. They make it clear, and trainees appreciate this, that off-the-job schemes which include residential experience and the beginnings of computer skill provide a genuine plus in terms of personal development and employability.

Some college courses inevitably provide the type of pre-digested learning which contrasts with the new-found pleasure which trainees, many of them for the first time, take in working things out for themselves. And the most notable success of colleges is clear when young people are asked to look back: it is not their curriculum which they wish they could have changed, but themselves.

Whatever colleges provide, they appear to be at their best when they are building up young people's confidence, when they are relating knowledge and skill to the real world and when they enable young people to see that it is the combination of vocational know-how, basic education and life skill which provides them with satisfaction and hope.

It is important not to lose sight of this at a time when the pressures on colleges are too numerous and diverse to allow either local authorities or colleges to believe that they can stand firm against any arrant piece of centralist dogma. The pressures are not all dogmatic nor are they all arrantly expressed. Further education is being asked, as it has been asked in every year since the White Papers of the 1950s, to make a positive response to needs which have been expressed in vocational, economic and political terms. But this time the scale and the many facets of the demand make it different. The customary vigour of colleges, their adaptability and their readiness to look at new needs through other people's eyes will be tested to the maximum if it is felt that their efforts may end up in take-overs and reductions. But even in an era which may turn out to have set the sharpest of tests for further education in the whole 30 years of the development in the form we know it, the best responses will ultimately be those which still show no fear about market competition – but provided that the market is not rigged.

J. G. Owen

The author is Chief Education Officer of Devon.

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Education for employment

The autobahn to success

It would not be making unreasonable use of metaphor to suggest that the West German vocational education system has pathways which are reminiscent of that country's autobahn network. The network is of excellent quality, comprehensive, easily understood, with clear route markings, well designed and equipped and reaches all areas of the country.

By comparison the UK possesses some excellent motorways which all too often end nowhere. The system is not coherent and this makes route planning more confusing and destinations more difficult to reach. A cursory glimpse at what can still be learned from the West German system should provide justification for the metaphor.

Education in West Germany is a *Land* responsibility, the vocational training element is the responsibility of the federal government and vocational education is financed in the approximate ratio of 2:1 by both *Länder* and local authorties. In-plant training if financed by industry and the Federal Institute for Labour. The school system provides neat and convenient routes to higher education or training and throughout the period of compulsory schooling there is the possibility of learning about the world of work. Since the Vocational Training Act of 1969 each *Land* has developed its own programme of *Arbeitslehre*. This is the centre of pre-vocational education and offers knowledge, insights and experience of working life. It is a curriculum subject which contributes to careers guidance provided through the Federal Labour Office. For pupils of lower attainment in secondary education it will become increasingly integrated with the foundation year of vocational education. Some *Länder* use "fields" rather than subjects and work is coordinated between the lower levels of secondary schools and vocational schools in "contact districts" conveniently located. The school further education interface is well-developed.

For the lower attainers without a secondary school leaving certificate there exists a vocational preparation year (VPY), the main aim of which is to enable pupils to enter and complete vocational training. After completing the VPY pupils can enter training or commence a vocational foundation year. For those with language difficulties (usually the children of guest workers) a special form of the VPY exists. Subjects are chosen from a variety of vocational "fields" with an emphasis on practical work.

An innovation of the late 1970s in Germany is the Vocational Foundation Year (VFY) providing basic training orientated towards a particular field of related occupations and an increasing number of youngsters complete their first year of vocational training in this way. From approximately 460 legally defined trades in West Germany but 13 "fields" have been established.

Aims of the VFY are to reform apprenticeships, provide a sound basis for adaptation to change and necessary retraining. It allows for manoeuvre prior to a youngster finally taking up a trade, is a taster for a chosen occupation, provides a broad base for advancement to higher training and allows flexibility. Furthermore crediting of between 6 and 12 months can be made towards the length of trade training.

From the VFY youngsters are enabled to enter the celebrated dual system of in-plant training and education at vocational schools and progress through a clearly charted set of pathways. Approximately six types of further education college provide at various levels both full and part-time courses of education and training. The routes along clearly marked pathways allow entry to ever more advanced "technical" training in polytechnics, technical universities or other university-level institutions. This is the basis for permanent further vocational or professional training and meaningful continuing education.

The 1969 Act has been crucially important for a number of reasons. It made possible a broad-based vocational training enabling youngsters to cope with the demands of working life in a highly developed and diversified economy. It led to the establishment of joint examination boards incorporating industrial and educational representation and a system of written, practical and oral examinations lending to certification of candidates as "skilled", "craftsman" or "assistant" (for the commercial sector). The challenging fact is that around 90 per cent of West German youth receive vocational or professional training and enter a workforce that is highly trained and well motivated. Furthermore 100 per cent must receive education until the age of 18.

A major consequence of the 1969 Act was the establishment in 1970 of the Federal Institute for Vocational Education. Its brief is to improve through research, development, planning and promotion, post school education and ensure the collaboration of all engaged in vocational education: employers, unions, the federation and the *Länder*. Its major committee comprising representatives from the unions, commerce, agriculture and the federal and *Länder* governments has considerable influence in advising the federal authorities on questions of training.

In this country there is clear evidence of some motorway building which has drawn heavily on models developed in Germany. Much is being done rapidly, the initiatives are bold and imaginative. But provision is uneven, schemes uncoordinated and often not well understood by both providers and clients.

There are three major initiatives. The Technical and Vocational Education Initiative (TVEI), still in its pilot stages, will offer a four year course of full time general and vocational education across the whole ability range for 14 to 18 year olds. It will broaden and enrich the curriculum, use a skills-based approach, emphasize behavioural objectives and develop links with futher education and industry. The course will be regularly evaluated and it stands an excellent chance of being very effective.

The Certificate of Pre Vocational Education has its German counterpart. As a result of the White Paper 17 plus a new qualification, several prevocational courses taken by 16 and 17-year-olds will, starting this September, become part of a new national qualification: CPVE. It has been recognized that GCE, CSE and CEE do not meet fully the needs of youngsters of widely varying ability who are not yet ready to embark on vocational education. The estimate is that 80,000 pupils will take advantage of the one year course which will have core subjects, vocational elements and additional options. CPVE will provide the basis for a progression to further education training or work. A joint board has been established by BTEC and City and Guilds and the FEU has been commissioned to coordinate a programme of support through a network of 10 regional curriculum bases.

The much discussed YTS, a strategy for reforming and extending training, began last September. As a new and permanent training system for school-leavers its purposes are to provide a bridge between school and work and widen opportunities for the creation of a better-equipped, more motivated workforce. The very large-scale national plan is for youth under 18 to be offered a year's work experience with three months off-the-job training and education in FE.

The scheme has attracted much criticism: funding has not covered the more expensive Mode B training, and the off the job element is rarely effectively incorporated into work experience nor provides appropriate skills for industry. (The recent appointment in MSC of a head of a YTS quality team may improve matters). But perhaps the biggest issue is its uneasy fit into FE provision.

Staff in FE who bear the burden of implementing YTS courses are too often ill prepared for the task. The frequent lack of guidance, support and encouragement can lead to a feeling of loneliness and confusion. There appears to be a lack of *Gestalt* and the feeling that all too often the myopic are leading the blind. Perhaps the fact that most teachers on YTS courses are at a level and that there has been a much lower than expected take up of YTS [illegible] is eloquent testimony to the need for a serious inquiry into the place of such schemes within the vocational education system.

There are enormous implications for management training at school and college level, from training trainers to training educational managers. There are clear challenges for the MSC which will be funding about one quarter of non-advanced work-related courses in FE. A vast information and training programme for all concerned with vocational education and training must be a *sine qua non* for its success.

But success is connected with motivation and this results from a conviction that both vocational training and employment are worthwhile. The new clientele in non-advanced FE are often the disaffected, for whom the secondary curriculum appeared irrelevant. New schemes must be clearly understood as part of a comprehensive set of pathways leading somewhere: a nationally recognized and respected vocational training providing genuine employment prospects. The esteem accorded well-trained and qualified people at all levels must be nurtured. This is the case in West Germany.

Its vocational system is rooted in the excellent traditions of apprentice, craftsman and master craftsman and has the benefit of such seminal influences as Georg Kerschensteiner and Eduard Spranger. In the land of Martin Luther and Max Weber the notion of vocational "calling" and work ethic are still very strong motivating forces. But most of all high esteem is attached to vocational training which caters for the lowest assistants in the retail trade as well as the engineers in major industries.

Comparative studies which identify good practices and effective models elsewhere can be used to inform policy makers and planners here. A century ago the Royal Commission on Technical Education inquired into instruction of industrial classes in certain foreign countries to compare with the provision here. We now have developed and refined tools of comparative analysis. They must be put to good advantage in building a clearer, better pattern of provision on tried, tested and esteemed traditions here.

We are still very much in the process of motorway building.

Peter Stokes

The author is lecturer in education at University College Cardiff.

Taking a broader look at the problems

[illegible] ically, the effect of this in further and higher education has been an ever greater preoccupation with links with employment.

This paradox is not senseless. It responds to the anxieties of individuals faced with uncertainty. When employment is in good supply, students can choose courses for all sorts of reasons, in the assurance that they will be able to find a job at the end anyway. But when employment is scarce, students are more likely to judge the value of a course narrowly in terms of the employment opportunites to which it promises to give access.

At a more general level, there is also a sense in which greater attention to employment serves the interests of equity. In principle, the more people who can be helped to be employable, the more chance there is that unemployment will be shared around rather than confined to particular groups of long-term unemployed. The Youth Training Scheme, for example, can be [illegible] attempt to prevent the young people who would [illegible] become unemployable.

There is also, however, a third and more covert rationale for strengthening links with employment. It distracts attention from the political and economic causes of unemployment. It maintains the illusion that there continues to be a adequate world of employment to prepare *for*. Unemployment is ignored, or is used as a motivational stick to beat students with, or is regarded as a personal problem to be "treated".

Yet this kind of response carries with its considerable dangers. It encourages students to invest ever more heavily in the desirability of securing employment. It does nothing to prepare them for the possibility that they may not achieve their goal. It accordingly only exacerbates their likely sense of disillusionment if they fail. But it also does nothing, on a "macro" scale, to increase the number who will achieve the goal. At best it increases the chances of some people *at the [illegible]*. As a total policy, [illegible]

Moreover, the sense of colluding with a deceit can undermine the confidence of those involved in teaching. The time-honoured phrase, "If you work hard, you will get a (good) job", freezes on their lips. Yet, often, they are fearful of abandoning it, or of confronting the source of their doubts.

Unemployment poses challenges not only at the lower end of the further education system but throughout further and higher education. It is salutary to note the extent of graduate unemployment. Of home first-degree students who left universities in 1981/1982, 12 per cent were still known to be unemployed at the end of December 1982. But to make this figure comparable with school-leaver statistics, one should include only those who make themselves available for employment, and exclude those going on to further education and training, etc. If this is done, the figure rises to 20 per cent. This signs are that these figures dropped a little in 1983, but are still terrifyingly high for the intellectual elite of the nation.

Within higher education, there have been some attempts to find wider and more adequate ways of responding to this challenge than simply tightening the bonds with employment. Careers services have run courses for unemployed graduates, and have also sometimes attempted to incorporate attention to unemployment in careers education courses for students. Most of these activities focus on job-hunting; some, however, include attention to group support and other forms of self-help.

In addition, several careers services in higher education have begun to run courses and other events designed to encourage students to consider self-employment as a possibility. At least one university has broadened this to include attention to cooperatives and various other forms of voluntary and community action which could provide alternatives to employment.

Increased interest in self-employment has also been evident in parts of further education. It is, however, on YTS that the issue of unemployment presses most sharply. Although YTS is primarily designed not as an unemployment programme but as a "permanent bridge between school and work"; the fact that it is being implemented at a time of high unemployment imposes severe strains upon it.

Its success is bound in significant measure to be evaluated not in terms of its intrinsic qualities as a training programme, but in terms of placement rates into employment. And in these terms it is bound – particularly in some parts of the country – to fail, whatever the quality of YTS schemes. The danger, therefore, is that YTS will become discredited in the eyes of many young people, parents, etc, for reasons which are largely beyond its control.

Accordingly, some efforts have been made within the design of YTS schemes to take account of unemployment. One of the offical YTS "learning opportunities" is the "World Outside Employment" which includes "how the trainees' skills can be reinforced by using them in the community" and "the nature of unemployment and how to cope with it". But the Government pressures on policital education in YTS – especially the notorious directive (subsequently withdrawn, but significant none the less) that within YTS "matters related to the organization and functioning of society should be excluded unless they are relevant to trainees' work experience" have warned schemes to approach this area with trepidation. On the whole, Mode B schemes have been more likely than Mode A schemes to tackle it with energy and creativity. Yet it is Mode B schemes that are now being cut back.

Taking the realities of unemployment on board can take a variety of forms. Reasserting the wider personal and cultural value of education is important; but is unlikely to be sufficient: issues of status, identity and income – all identified so closely with employment in our society – still need to be addressed.

continued on page 27

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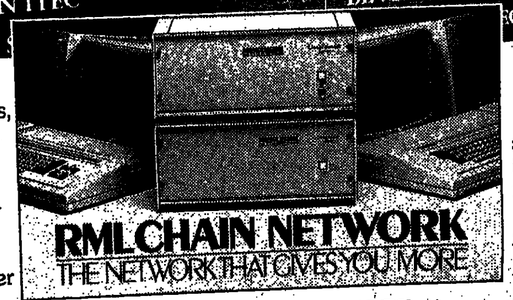

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Education for employment

Looking into the future

Charles Handy looks at how the world of work is changing, from the nature of jobs to the number of hours

Four facts are enough to demonstrate how the world of work has been and is still changing.

Today, only one in every two adults of working age has a full-time job. There are about 31 million people of working age who are not in college, hospital or prison. Of these only 15.8 million are in full-time employment. Too many of the rest are unemployed but very many are now self-employed or part-time employed. The "employer" and "the works" no longer fill the lives and the days of so many people.

The Organization for Economic Cooperation and Development countries need to create 20,000 new jobs *every day* to satisfy the needs of the extra numbers of young people joining the labour market. In Britain there will probably be one million extra workers in the next 15 years as those joining the workforce continue to outnumber those leaving. The fall in the birthrate in the 1970s only means that the workforce will, by 1999, look decidedly middle-aged. It won't be smaller. Unemployment is due more to an increase in the *demand* for jobs than it is by a decrease in the *supply* of jobs.

Between 1961 and 1981 the number of married women in the workforce between these figures because the women mostly went into new part-time jobs in the service industries, whereas unemployment came from the traditional jobs in manufacturing. The figure, however, underlines the facts that *everyone* nowadays expects to join the workforce for part of their lives and that women are suffering less than men from unemployment.

The 100,000 hour life-time job has almost halved to 50,000 hours. We used to work for 47 hours a week (including overtime) for 47 weeks a year for 47 years (=102,000 hours). It is now increasingly common to work 35 hours for 42 weeks (after counting in sick leave and absenteeism) for 35 years (=52,000 hours).

These facts illustrate how demography, economics and values are combining to change the place which work has in our lives. We have learnt to use people more productively just when there are more people who want to work. The mass employment industries are disappearing to countries where employees are cheaper and the businesses which are replacing them, in the services, need more brains and more fingers than brawn and muscles. They need bits of the time of people rather than big chunks of their time. The new jobs are around the edges of organizations, providing services to corporations or to individuals. That is disrupting to those who have looked to a corporation for a wage packet or a career for life, but it is releasing and [illegible] those who see the job as to control their own time.

Organizations, for instance, are increasingly distinguishing between three categories of work and people.

There is the professional core, doing work that is peculiar and essential to that one organization. To those people the organization offers careers and security, bonding them in with perks and benefits but requiring in return a lot of flexibility, mobility and commitment. Such people are expensive which means that the organization tries to keep their numbers down and is increasingly concerned that they leave [illegible] in later life.

Secondly there is the contractual fringe to which the organization "outsources" (to use the dreadful jargon of the day) the kind of work which can be more cheaply done by outside because they are needed only intermittently or because they can run a more specialist service. The contractual fringe now includes professional services (lawyers, advertisers and designers), service providers (cleaners, drivers, maintenance crews) suppliers and agents. No longer do you have to employ someone in order to control them. Thirdly there is the "workforce" to whom the organization offers money for hours in an increasingly instrumental relationship. The hours are increasingly part-time, or in shifts, to give the organization flexibility; the skills needed are not great, are quickly learnt and are usually needed by other similar organizations. The result is a fluctuating intermittent and often uncommitted group of people who increasingly work mainly for the money and get their interests outside the workplace.

One result of this loosening up of the employment organization has been the growth of the informal economy, both its illegal "black economy" part and its respectable domestic side. It is obviously tempting for those with salable skills and services to sell them more profitably on the side now that many have more time and less money. The wonder indeed is that this illegal market is still probably less than 5 per cent of the official economy and the sad thing, in a way, is that the market is not used by the unemployed but by the already employed. It is primarily a second job market not a substitute market. Work, it seems, feeds on work not on enforced leisure. It is, however, the domestic economy which is at last beginning to get the recognition it deserves, perhaps because more men are finding themselves in it! The home, it is estimated, uses, in aggregate, half as much labour as the whole of the formal economy, not just in cooking and cleaning but principally in the care of the young, the old and the infirm. Transferred to the state, or to private concerns, these services would cost billions and would, incidentally, magnificently boost the official wealth of the nation.

It is, however, probably better, and certainly more cost effective, for such things to be done at home whenever possible. It is also often more sensible, if you have time on your hands, to do some job about the house yourself and thus save money rather than to go out and earn money to pay someone else to do it for you. Self-sufficiency is a form of import substitution in the home; it makes a lot of sense but it pays no taxes which makes it hard for a government to view it as benevolently as perhaps they should.

We are still getting used to the new varieties of work and careers and there are many important questions waiting to be answered. Two of these are:

or an average? It it is the norm which everyone will expect, and many be able to work for 50,000 hours in some sort of job during their lifetime. Some will spin it out over 45 years by doing a little each week. Some will concentrate it into 25 years of 45 hour weeks in a professional career, retiring at 48 or 50. Others may do it in chunks with time out for rearing children or education. If 50,000 hours became a mere statistical average, however, it would mean that some clung on to 100,000 hour jobs and others had none at all. It is by no means obvious that society will, without a nudge or two, move towards the idea of a norm rather than an average.

● What will people do and what will they live on in the time that is spare? Ideally work should expand to fill the time available (in a benevolent variant of Parkinson's Law). but much of the work will be for free, in the home or the community and some will be for marginal income as more people do a little part-time self-employment. Leisure is only attractive as a counterpart to work; unadulterated leisure feels like prison not freedom. Indeed, unless more people are encouraged, and allowed, to supplement their pensions or their earnings with self-employment it is hard to see how they will live as well as they would like to. After all, crude mathematics suggests that if we are working half as many hours and have twice as many hours without work we need to be putting four times as much into our pensions. Not many are doing that. Will the state then have to face up to its responsibility for providing people with some of their livelihood if they can't provide them all with jobs? Will child allowances, unemployment benefit, supplementary benefit, student grants and trainee wages (all ways in which the state pays people) be gradually translated into a citizen's salary or a social wage? Or should the Inland Revenue be instructed to allow everyone an extra personal allowance to be set against any self-employment income so that they are encouraged to be entrepreneurs without penalty up to, say, £3,000 pa?

Education is going to be at the receiving end of many of the pressures for change. Some of these pressures will be:

The need to provide education for *everyone* until 20. It will become increasingly difficult and rare to enter the workforce under 20 years of age, except in a very intermittent and casual way. Indeed the children of the professional middle-classes do not expect to be really earning until they are 22 or even 25. Education for most people, of course, will not be in the classroom or with books. The Youth Training Scheme will turn out to be the first very small and very exploratory step in providing further education for work at work, but already the Manpower Services Commission is estimated to be spending more on education than the University Grants Committee.

The pressures for professional and vocational qualifications will increase inexorably. A world in which organizations want skills rather than employees will mean that everyone will want, and need, to have a salable skill. Those who, rightly believe that people also need to have an appreciation of art, history and culture, that they need to know the rudiments of science, of languages and mathematics, should not make the mistake of claiming that such a general education is in any way an *alternative* to salable skills. Ways must be found to make such an education a complement not a competitor at all levels of education.

There will have to be more faces of success in education than intellectual achievement. Talent and intelligence has many aspects. There is the analytical intelligence that is developed in so many courses and tested in so many examinations. But there is also the creative or pattern-making intelligence, there is musical intelligence, as well a practical talent and physical or athletic ability. None of these necessarily correlate with analytical intelligence. Lastly there are intra-personal intelligence, with its stress on sensitivity and feelings, and inter-personal ability, which allows one to work with and through others. The world of the future will need all these talents. Most people have at least some of one but too often they can pass through their youth and even their whole lives without discovering which it is. By concentrating so much on analytical intelligence the education system unfairly brands too many as failures too early in life. Education for Capability, to use the Royal Society of Arts phrase, has to be at least as important as education in knowledge and analysis, when people have increasingly to respond to situations rather than to instructions.

The future of work could be exciting if it means that there is more freedom for everyone to have more control over his or her time and talents. It could however so easily be the return to a sort of feudalism in which those with secure professional jobs lord it over the masses on the edges, keeping them placid, they hope, with subsidies and television, the modern varieties of bread and circuses. It did not last in Rome and it would not last long in Britain. We have to educate people and institutions for the other kind of future if we want to have a future at all.

The author is visiting professor at the London Business School and author of The Future of Work.

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Education for employment

Finding the path to recovery

The notion that people are educated for life but train for a job is in rapid demise, and rightly so. The divide between the academic and the vocational has been fierce and longstanding, but its time is up, at least at the level of ideas. The reform of institutions and policies will take much longer, but the agenda at any rate is being constructed to close the gap throughout the system, from the schools to the universities.

The emerging theme is one of "education for employment", and its easy to see why this should be so. The overriding current concern is to find a path to economic recovery and a reduction in unemployment. Many of the arguments which helped to insulate education from economy have been swept away by the general anxiety to harness the education system in the task of rebuilding the economic base.

While education for employment is the fashion, this does not simply mean a reorientation of the present education system to better accommodate the needs of the economy. It is a commonplace that the workforce of the 1990s will require increasing flexibility, a willingness to train and retrain throughout working life. The emphasis will be on *continuing* education rather than education to a set age followed by employment through to retirement. Education and training will become more difficult to distinguish. Moreover, the impact of the new technology will be a pervasive consideration by both the character and the content of the learning needs of the economy that will be underpinning society at the turn of the twenty-first century.

Even within these parameters, there is scope for sharp disagreement on how learning for employment should be best conducted, and how concepts such as a "flexible" workforce should be realized in practice. The world conjures an image of employees equipped to face successive waves of intellectual challenge in their work. However, one measure given to a Nedo study tenm was the "flexibility" of workers to accept compulsory overtime at 30 minutes notice!

[illegible] ment to these questions is especially worrying. There is a clear desire to make education entirely subservient to employers' needs – or rather to employers' wants, because these two are different. This is, in effect, an extension of a general preoccupation with the virtues of the market as a device for ordering priorities and planning future needs. It was in pursuit of this philosophy that the bulk of the industrial training boards were abolished and privatization elements introduced into training in both skillcentres and the Youth Training Scheme.

Unfortunately, the record reveals that over 30 years of accumulated experience, employers are in fact notoriously bad at identifying their skilled manpower needs and at providing even for those they have identified. In both the 1960s and 1970s it was necessary for government to step in with legislation and organizational machinery. In the current recession it is essential that government plays a direct role, because many firms have cut back on training costs as part of a strategy for survival. Moreover, the greater emphasis on transferable skills and flexibility makes it even more likely that firms which still finance training will lose their skilled workers to the benefit of their less scrupulous market rivals.

Unsurprisingly, given the weight of evidence, the government do seem finally to have realized that, having destroyed the system that previously existed, they simply cannot afford to leave things as they are. An HMI report earlier this year forcefully criticized employers as much as it did the further education sector for failing to coordinate the product of the education service with the needs of employers. Similarly, an Institute of Manpower Studies report has underlined the relatively low level of investment in training in Britain compared to our competitors, and has made the link with our abysmal level of economic performance.

The Conservative Government has responded with a series of exhortations to industry to take training more seriously, and to increase their level of investment. But the Government's ideological blinkers fix their eyes on a vision in which the need for government itself to [illegible] bridging the education and training systems and harnessing both, this government remains wedded to a dual system in which the state pays for education and employers (inadequately) finance training.

Nowhere is the Government's weakness of purpose more apparent than in the critical field of high technology. The new technology offers real possibilities of creating wealth, improving products and performance, but there are already serious shortfalls of skilled personnel. The Government has a poor record on microtechnology generally – one of Sir Keith Joseph's first acts as Secretary of State for Trade and Industry was to cut the level of support for this sector. Although these funds have since been partially restored, there remains an inability to provide the kind of drive and direction that only government can give.

One example of this is the shortfall of graduates in technology subjects. The gap between demand and supply in the areas of electronic and computing science is well known, though estimates of the scale of the shortfall vary. Government departments are aware of the problem, and there have been various Whitehall committees working away at the problem in an attempt to produce a costed, workable solution. Within the last month, one proposed a scheme costing £400m to switch resources in this direction. (If this sounds a lot, its worth bearing in mind that the state of Texas alone is considering spending an extra $670m on its schools to help it attract the high-tech industries).

When key ministers met to consider the recommendations they could not bring themselves to the necessary public expenditure. It seems there was a collective inability to realize the dimension of the crisis, the urgency for action, and the priority it must be given to ensure Britain's economic survival.

A new approach is needed, and the seeds of that are contained within my own appointment as a shadow minister for training, with a brief to bridge the education and employment ministries and help to stimulate a policy for the Labour Party which tackled learning needs in a comprehensive and forward looking way.

The scale of the problems is of course enormous. The departments of government themselves have a structure which is ill fitted to the task. They actually reflect and reinforce the academic/vocational divide, and the attempt to conjoin the two through the agency of the Manpower Services Commission has so far not been encouraging.

There are also a number of major special learning needs to which future policy must attend, which stand alongside the need for continuing training and education for those who actually have work. There is the transition from education to work, particularly for school leavers. There are needs of what is becoming increasingly a lost generation of young people under 25 who are without skills or jobs or training opportunities – half a million have been out of work for six months or more. Then there are the older workers, especially those with skills that are no longer in demand.

First, our education [illegible] committed to economic expansion both through a revitalization of industry and an extension of the public sector. Our intention is a public sector-led strategy of investment capable of generating activity throughout the economy. Allied with investment in house building and public utilities, manufacturing plant and the new technologies, must go training programmes for those for whom these investments will create jobs. We will be aiming for a dual investment, in both the capital and the human stock of our country.

Secondly, education and training must be geared to the wider objectives of an economic and industrial democracy. This is, or should be, a simple corollary of the importance attached to a flexible and creative workforce – so long as the idea of flexibility is not confused with a willingness to take orders. It is not our task to apply the resources of an education and training system to providing industry with an unthinking and compliant workforce.

Education for employment is in the proper sense the preparation of the citizen for life in its social and democratic as well as its economic and industrial dimensions. Any strategy pursued by government or promoted by party which ignores this will imperil all our economic and democratic tomorrows.

Barry Sheerman

The author is Labour MP for Huddersfield.

Taking a broader look at the problems

continued from page 24

So other more specific approaches may be needed. Greater attention to self-employment, cooperatives, etc is one. Involvement in community initiatives designed to generate employment – community business ventures, etc – is another. So is helping students to prepare for the possibility that they might become unemployed, and to learn to cope economically and psychologically. Becoming more aware of the political and economic origins of unemployment, and possible political and economic responses to it, is yet another: a spin-off from this is that it may make students less likely to regard unemployment simply as a mark of personal inadequacy.

Beneath all these matters lie some deep questions about the future of work. So many practices in further and higher education reflects the world of employment as it has become established since the industrial revolution. Our educational structures are based heavily on the notion that education *precedes* work, and provide entrance vouchers to jobs created by others. *What* one learns is of less moment than the pieces of paper one acquires, which can then be traded in for employment.

It may be that in the post-industrial world into which we are now moving, many of these assumptions will have to be radically revised. Perhaps the most pressing question for further and higher education is whether it is to play a role in enabling society to adapt creatively to these changes. Or is it to be part of a conspiracy of silence which pretends that nothing has altered?

Tony Watts

The author is executive director of the National Institute for Careers Education and Counselling, which is jointly sponsored by the Careers Research and Advisory Centre and Hatfield Polytechnic. Many of the points in this article are discussed in greater detail in his book Education, Unemployment and the Future of Work *published recently by the Open University Press, price £5.95.*

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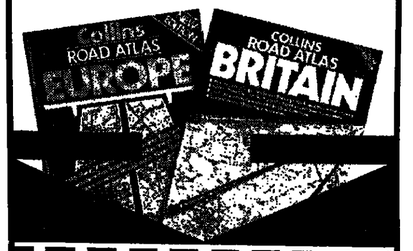

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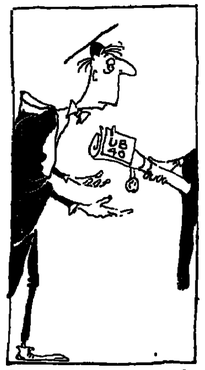
Education for employment

Graduating to the dole



Jim Taylor and Geraint Johnes look at the sharp rise in graduate unemployment

In a recent article in *The Times Higher Educational Supplement* (March 16) John O'Leary drew attention to the sharp rise in the unemployment rate of new graduates. The present article focuses attention on one particular aspect of this deterioration in employment prospects for new graduates, namely the differential impact of the recession on graduates in different subjects.

According to figures released annually by the Universities' Statistical Record, new graduates have suffered from the recession in much the same way as the rest of the working population. The unemployment rate of the new crop of university graduates increased from 4.6 per cent to 12.1 per cent between 1979 and 1982. This corresponds almost exactly with the increase in the national unemployment rate.

Clearly, a degree does not guarantee immunity from economic slump. Indeed, the accompanying chart shows that the graduate unemployment rate correlates very closely with the UK rate over the past seven years.

The overall picture is deceiving, however, since the effect has varied remarkably between subjects. In the sciences, biology, botany, agricultural biology, zoology, geology and environmental sciences have been particularly hard hit, with unemployment rates rising to around 20 per cent at the end of 1982 (see column 1 of table 1). In the arts and social sciences, the major sufferers have been archaeology, philosophy, government and public administration.

At the opposite end of the spectrum, several subjects have been virtually immune, particularly those associ managed to keep their unemployment rates down below the 5 per cent mark.

Subject differences in the unemployment rate need to be treated with caution. Not all new graduates proceed straight to the job market immediately after graduation. Many go on to undertake further education and training. It is therefore useful to compare the actual unemployment rate with the unemployment rate for those graduates who proceed straight to the job market.

Table 1 shows two unemployment rates: the rate for all graduates and the rate for those graduates who proceeded straight to the job market. exceeds the actual rate in nearly all subjects. The difference is particularly marked in law, music and theology.

Further investigation reveals that the subjects in which the amended rate is substantially in excess of the actual rate are mainly those with high actual rates (eg the biological and chemical sciences, government, sociology and philosophy). In addition, several popular school subject (eg modern languages, geography and physics) have substantially higher amended rates than their actual rates.

Which of these two unemployment rates is relevant for assessing the differential employability of graduates in different subjects is uncertain. This depends upon whether further training increases the chance of finding a job. Thus, although a very high proportion of law graduates are able to get permanent employment on completion of their training, the picture is less rosy for those taking postgraduate teaching qualifications.

The effect of the recession on the employment prospect of new graduates is best measured by the *change* in unemployment between 1979 and 1982. Such analysis reveals a wide disparity in the experience of different subjects: 18 per cent of the subjects in table 2 experienced an increase in their unemployment rate of under 5 percentage points, whereas 30 per cent experienced an increase of more than 10 percentage points. The remaining 52 per cent of all subjects experienced an increase fairly close to the national average.

Focusing attention on those subjects with only a small increase in their unemployment rate, we see once again that the professions figure prominently. This favourable performance by the professions can be explained at least in part by the resistance to the recession experienced by two industrial sectors: insurance, banking and finance, and professional and scientific services. Both industries actually increased their employment levels between 1979 and 1982.

The small increases in unemployment recorded for Hispanic, social anthropology and music are less easy to explain. But it should be remembered that both Hispanic and social further training after graduation.

The picture is less clear cut for those subjects which experienced large increases in unemployment. One very distinctive feature, however, is the poor performance of chemistry-related and biology-related subjects (see table 3). Other subjects which did badly are geography, environmental sciences and geology on the one hand, and aeronautical engineering, metallurgy and other technologies on the other. The poor performance of these specific engineering subjects compared very unfavourably with other subjects in the engineering group. General engineering, electrical engineering and civil engineering, for instance, all experienced relatively small increases in their unemployment rates.

In the arts and social sciences, the worst-affected subjects were archaeology, philosophy, history, sociology, government and public administration. Why these particular subjects should do so much worse than other subjects in the arts and social sciences is not so easy to explain. One possible explanation is that a greater proportion of those graduating in subjects which are popular in schools (such as English and modern languages) have proceeded to postgraduate education courses. This has helped to reduce the impact of the slump on these subjects.

Data on graduate unemployment rates therefore reveals a wide diversity of experience between subjects. The worst-affected subjects have included pure and applied sciences as well as subjects in the arts and social sciences. In the sciences, the chemistry-related and biology-related subjects have been particularly hard hit.

As might be expected, directly vocational subjects (such as medicine, dentistry, accountancy, architecture and law) have done well. But this is hardly surprising since the job market has been much stronger in the professions.

Finally, it is worth reiterating that the 1979/82 recession had exactly the same effect on new graduates as on the UK labour market as a whole. A substantial and sustained economic recovery is needed if the graduate unemployment rate is to return to its pre-recession level.

The authors teach in the department of economics, University of Lancaster. The present paper is part of a larger research project into graduate unemployment which is being financed by a Nuffield Small Grant.

Unemployment rates of new graduates by subject, December 31 1982: actual unemployment rate and unemployment rate amended to exclude graduates proceeding to further training

Subject	Unemployment rate	
	Actual	Amended
Medicine	0.1	0.1
Pharmacy	0.4	0.4
Dentistry	0.8	0.8
Architecture	2.4	3.2
Other medicine	3.3	3.6
Veterinary science	3.5	3.6
Accounting	3.5	3.6
Law	3.8	13.0
Music	7.2	15.0
Town & country planning	7.3	8.4
Hotel management	7.4	8.5
General, other engineering	7.6	8.8
Electrical engineering	7.8	8.9
Theology	8.3	15.2
Engineering & other	8.9	10.2
Education	8.9	9.8
Civil engineering	9.0	10.4
Mathematics	9.8	13.2
Hispanic	9.9	14.0
Combinations with education	9.9	12.6
German/French	9.9	15.0
German	10.0	15.6
Mining	10.2	12.6
French	10.5	16.0
Maths/Physics	10.6	15.9
Mechanical engineering	10.7	12.0
Other languages	11.2	17.3
Social anthropology	11.9	15.8
Business and management	12.1	13.2
UK AVERAGE	12.1	16.5
Other W. European languages	12.2	18.5
Agriculture	12.3	14.6
Combinations of pure science	12.4	16.6
Combinations of social sciences	12.6	15.8
Physics	12.8	16.7
Economics	13.2	15.5
Classics	13.4	20.7
Aeronautical engineering	13.6	16.3
Forestry	13.6	17.5
Art & design	14.2	16.1
Chemistry	14.2	20.1
Pharmacy	14.3	25.5
Social science & arts combinations	14.4	19.3
Physiology	14.8	20.6
English	15.2	22.4
Physical science combinations	15.5	20.4
Biochemistry	15.9	27.3
Other technologies	15.9	20.3
Language, arts combinations	15.9	22.5
Metallurgy	16.1	23.7
Georgraphy	16.1	22.8
Psychology	16.2	22.2
Arts & general combinations	16.8	25.5
History	16.8	28.9
Russian	16.8	21.2
Sociology	17.1	22.1
Chemical engineering	17.4	22.3
Biology	18.1	26.9
Biology & physical sciences comb	18.9	27.1
Biology combinations	19.1	27.4
Botany	19.4	31.0
Agricultural biology	19.5	27.1
Geology	20.6	29.1
Govt & public administration	21.7	28.7
Zoology	22.2	34.6
Environmental science	22.7	30.0
Archaeology	23.3	29.1
Philosophy	29.6	37.1

Note: The *actual* unemployment rate is calculated by dividing (i) those graduates believed to be unemployed on December 31 1982 by (ii) the total number of graduates in 1982 and then multiplying by 100. The *amended* unemployment rate uses total graduates less graduates proceeding to further education and training as its denominator. Subjects with less than 100 graduates are not included. Source of data: *First Destinations of University Graduates*, Universities' Statistical Record, Cheltenham.

The change in unemployment during the 1979/82 recession: by subject

Subject	Unemployment rate		
	1979	1982	Change
Dentistry	3.1	0.8	−2.3
Social anthropology	12.9	11.0	−1.0
Medicine	0.1	0.1	0.0
Pharmacy	0.3	0.4	0.1
Architecture	1.5	2.4	0.9
Veterinary science	2.5	3.5	1.0
Hispanic	8.0	9.9	1.3
Accountancy	2.0	3.5	1.5
Other medicine & health	1.5	3.3	1.8
Law	1.8	3.8	2.0
Hotel management	5.4	7.4	2.0
Music	4.0	7.2	3.2
French	5.4	10.5	5.1
Town & country planning	2.0	7.3	5.3
Theology	2.6	8.3	5.7
Other W. European languages	5.4	11.2	5.8
General, other engineering	6.4	12.2	5.8
Electrical engineering	1.7	7.6	5.8
Combinations of pure science	1.9	7.8	5.9
Engineering & other	6.3	12.4	6.1
Civil engineering	3.8	10.0	6.2
Combinations in social sciences	2.7	8.9	6.2
Education	2.5	9.0	6.5
Classics	6.0	12.6	6.6
Mathematics	2.2	8.9	6.7
Combinations with education	6.5	13.4	6.9
English	2.7	9.8	7.1
AVERAGE	2.7	9.9	7.2
Social sciences & arts comb	7.8	15.2	7.4
German/French	4.6	12.1	7.5
Maths/Physics	6.7	14.4	7.7
Economics	2.2	9.9	7.7
	2.8	10.6	7.8
	5.4	13.2	7.8
Physics	6.4	14.3	7.9
Pharmacology	6.4	14.3	7.9
Art & design	6.3	14.2	7.9
Business & management	4.2	12.1	7.9
Psychology	8.3	16.2	7.9
Agriculture	4.8	12.3	7.5
Mining	1.7	10.2	8.5
Botany	10.8	19.4	8.6
Forestry	4.8	13.8	9.0
Arts, general comb.	7.6	16.6	9.0
Mechanical eng.	1.5	10.7	9.2
Russian	7.4	16.6	9.2
Language, arts comb	6.4	15.9	9.5
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Physics	3.1	12.9	9.8
Geography	5.7	16.1	10.4
History	6.4	16.8	10.4
Biochemistry	5.4	15.9	10.5
Chemistry	3.8	14.2	10.4
Physiology	4.1	14.8	10.7
Other technologies	5.2	15.9	10.7
Sociology	6.2	17.1	10.9
Metallurgy	5.0	16.1	11.1
Biology	6.7	18.1	11.4
Biol & science comb	7.5	19.1	11.6
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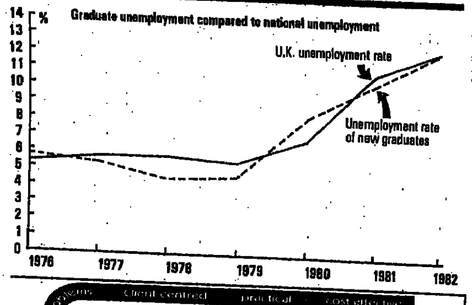
Aeronautical eng	8.6	13.6	13.0
Govt & public admin.	8.4	21.7	13.3
Environmental sciences	9.0	22.7	13.7
Chemical engineering	3.4	17.4	14.0
Geology	8.3	23.0	14.3
Archaeology	8.0	23.3	15.3
Zoology	8.8	22.2	15.3
Philosophy	10.4	29.8	19.4

Subjects with low and high changes in their unemployment rates during the 1979/82 recession

Low change subjects (under 5%)		
Dentistry	Architecture	Social anthropology
Medicine	Accountancy	Hispanic
Pharmacy	Law	Music
Veterinary sciences	Hotel management	
Other medicine and health		

High change subjects (over 10%)		
Physiology		
Biology	Biochemistry	Geography
Biological science combination	Chemistry	Environmental sciences
Biol & Phys sciences comb	Chemical engineering	Geology
Agricultural biology	Other technologies	
Zoology	Metallurgy	
	Aeronautical engineering	
History		
Archaeology	Sociology	
	Government and public administration	
Philosophy		



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Applications are invited for the above post in the Department of Postgraduate Secondary Education with effect from 1st September 1984 or as soon as possible thereafter.

The successful applicant will be required to undertake general tutorial duties on the one year postgraduate course of education for secondary teachers and, in particular, to take responsibility for the coordination of school-based work in Geography. He or she will also be expected to contribute to the School's in-service programme in the area of Curriculum Studies.

Candidates should be qualified teachers with extensive teaching experience and qualifications both in Geography and Curriculum Studies preferably at the higher degree level.

The salary will be on the scale £8,802 x 18 increments to £13,539 pa inclusive of London Allowance.

Write for further details to the Senior Assistant Registrar (Personnel), University of London Goldsmiths' College, New Cross, London SE14 6NW. Closing date for receipt of completed applications 30th July 1984. (10859) H1

NIHE
NATIONAL INSTITUTE FOR HIGHER EDUCATION DUBLIN

Applications are invited for a

LECTURESHIP IN PROCESS ENGINEERING

The successful applicant will have major responsibility for the development and implementation of the process engineering syllabus of the Institute's Degree in Biotechnology. This four year degree course places equal emphasis on the engineering and biological aspects of biotechnology and provides students with practical experience at laboratory and pilot scale. The Institute is engaged extensively in industry supported biotechnology research & development activities and has ambitious plans for expansion of these programmes.

Candidates should be well qualified academically in Chemical or Biochemical Engineering and should ideally have had industrial, business, academic or research experience.

Salary scale: Lecturer: IR£13,797 - 18,807
Assistant Lecturer: IR£10,727 - 13,218

Application forms and further details are available from the Personnel Office, National Institute for Higher Education, Glasnevin, Dublin 9. Closing date: 10th August 1984.

NIHE
NATIONAL INSTITUTE FOR HIGHER EDUCATION DUBLIN

Applications are invited for the following position:

LECTURESHIPS IN PHYSICAL SCIENCES

The School of Physical Sciences provides a four year B.Sc. Honours in Applied Physics, and provides service inputs to five other degree programmes in the Institute. Specialist areas in the Applied Physics degree are transducers, fibre optics and solid state physics, with additional teaching commitments in acoustics and vacuum technology.

The School has active research programmes supported by industry and state grants.

Applicants should be well qualified academically and have substantial research and/or industrial experience.

Salary Scale:
Lecturer: £IR13,797 - £18,807
Asst. Lecturer: £IR10,727 - £13,218

Application forms and further details are available from Personnel Office, National Institute for Higher Education, Glasnevin, Dublin 9. Closing Date: 3rd August 1984.

The University of Lancaster
Department of English Literature

TEMPORARY LECTURESHIP

Applications are invited for the above post, tenable from 1 October 1984 to 31 March 1985, for which candidates should have a good honours degree in English literature. Research interest in Renaissance literature would be welcome. The appointment will be made on the three lowest points of the Lecturer scale (£7,196 – £8,196 – £9,196).

Further particulars may be obtained from the Academic Registrar, University of Lancaster, Bailrigg, Lancaster LA1 4YW, to whom applications should be sent by 20 JULY 1984. (10820) H1

University College London
Department of English

LECTURESHIP

The Department of English wishes to make a junior appointment and invites applications from candidates with an ability to teach in one or more of the following fields: Old English Language; Modern English Studies; 19th and Medieval Literature; 20th Century Literature; Anglo-American Literary Relations.

Salary will be at lower end of range £9,196–£14,196 (under review) + £1,196 London Allowance.

Candidates should submit 8 copies of their applications, giving two referees, to Assistant Secretary (Personnel), University College London, Gower Street, London WC1E 6BT, by 27 July 1984. (10822) H1

University of Glasgow
in the Department of Medical Cardiology
(supported by the British Heart Foundation at the Royal Infirmary of Glasgow)

WALTON CHAIR OF MEDICAL CARDIOLOGY

Applications are invited for the above post, tenable from 1st October, 1984, on the retiral next year of Professor T.D.V. Lawrie.

Further particulars may be obtained from the Academic Personnel Office, University of Glasgow, Glasgow G12 8QQ, where applications (8 copies – 1 copy in the case of overseas applicants), together with the names and address of not more than three referees, should be lodged on or before 31st August, 1984.

In reply please quote Ref. No. 5380 (10808) H1

Imperial College
University of London
Department of Chemical Engineering and Chemical Technology

LECTURERS IN CHEMICAL ENGINEERING

Applications are invited for a lectureship and a temporary lectureship in chemical engineering. The temporary lectureship will be tenable for a period of two months. The lecturers will be required to take a full part in the teaching of the four-year course in chemical engineering and the postgraduate course in advanced chemical engineering and also to undertake and initiate research.

Salary will be in the range £7160 – £14125 per annum plus London weighting of £1196 per annum according to qualifications and age, qualifications and experience.

Further particulars and application forms (2 copies) should be sent to Professor R. W. Rousseau, Department of Chemical Engineering and Chemical Technology, Imperial College, London SW7 2BY. Applications should include a curriculum vitae and the names and addresses of three referees.

Closing date for applications 10th August 1984. H1

University of Bradford

LECTURESHIPS IN CHEMICAL ENGINEERING 2 POSTS

In both posts the successful candidates will be expected to contribute to undergraduate and postgraduate teaching in chemical engineering and to pursue research. The research areas specified for the 2 posts are:

a)powder technology and particle processing (Ref: CHE/LN/TH/85).

b)separation processes involving membranes (Ref: CHE/LN/TH/85).

Salary will be in the range £7160 – £14125 per annum plus London weighting of £1196 per annum according to qualifications and age, experience.

Experience in the designated research areas is desirable but not essential. Salary will be at £7,196–£14,125 pa. Informal enquiries can be made to Professor M. F. Edwards.

Further particulars and application forms from the Personnel Secretary, University of Bradford, West Yorkshire BD7 1DP. Closing date 31st August. Please quote reference. (10853) H1

The University of Sussex

TEMPORARY LECTURESHIP IN ARTIFICIAL INTELLIGENCE IN THE COGNITIVE STUDIES PROGRAMME IN THE SCHOOL OF SOCIAL SCIENCES

There is no restriction in the field of interest within AI. The appointment will be on a lecturer A scale (£7,196 – £14,125 p.a., starting on 1st October, 1984, but possibly renewable for a further year.

Send self-addressed envelope (9" x 4") for further particulars and application form to Ms Susan Cory-Wright, Personnel Office, Sussex House, The University of Sussex, Falmer, Brighton BN1 9RH, Sussex. Applications must be received by 27 July 1984. (10818) H1

Universities continued

South Africa

Applications are invited from suitably qualified and experienced persons regardless of sex, race, colour or national origin for the following appointments at the University of the Witwatersrand in Johannesburg.

GENERAL ANATOMY

Snr. Lecturer/Lecturer

The successful applicant will be required to teach human anatomy and/or histology to dental and science students and to engage actively in research within this, the Department of General Anatomy in the School of Dentistry.

Areas of research interest include developmental biology, human biology and comparative and forensic anatomy.

Candidates should have a degree in dentistry, medicine or science, postgraduate experience being an added recommendation.

The total emolument attached to these posts is within the range: Senior Lecturer R25,239–R31,569 per annum* and Lecturer R16,688–R26,092 per annum* and the initial salary will depend on qualifications and experience.

Applications should be lodged by 31 July, 1984.

CHAIR OF INDUSTRIAL PSYCHOLOGY

The incumbent will be expected to take responsibility for the continuing development and day-to-day running of the Division of Industrial Psychology in the School of Psychology (which is headed by one of the present Professors); to provide courses for the BA, BCom and BSc degrees; and to give attention to the continuing provision of services courses for other degree curricula (e.g. nursing administration, architecture).

Advanced academic qualifications are essential and a research background and publications in reputable journals in industrial psychology or organisational psychology is a pre-requisite.

The total emolument attached to this post is R25,864–R33,888 per annum* depending on qualifications and experience.

Snr. Lecturer/Lecturer

The Department offers three undergraduate qualifying courses in Social Anthropology as well as an Honours degree and post-graduate training to the doctorate level. The appointee will be expected to contribute to teaching on all levels.

The total emolument attached to these posts is within the range: Senior Lecturer R18,546–R26,631 per annum* and Lecturer R14,178–R24,834 per annum* and the initial salary will depend on qualifications and experience.

Applications should be lodged by 31 August, 1984

To those appointed, benefits will include: annual bonus, housing subsidy (if eligible), generous leave privileges, pension, medical aid, remission of fees of dependants attending the University. Removal, travel and settling-in allowances may be payable.

For details information sheets on all the above posts, please contact Geoff Henning, South African Universities Office, 2nd Floor, Chichester House, 278 High Holborn, London WC1V 7HE.

*£1 = R1.79 approx.

(16568)

UNIVERSITY OF THE WITWATERSRAND

University of Edinburgh

APPLIED LINGUISTICS

Applications are invited for the following new appointments in the Applied Linguistics area in the University of Edinburgh.

1. Two posts of *Teaching Fellow* in the Institute for Applied Language Studies, to be concerned with the development of courses in Medical English and in Modern Language Teaching.

Salary Scale: £7,560–£8,978

Closing date: 20th July, 1984

Further particulars from and applications to: The Director, Institute for Applied Language Studies, University of Edinburgh, 21 Hill Place, Edinburgh EH8 9DP.

(16578)

The Queen's University of Belfast
Institute of Irish Studies

JUNIOR FELLOWSHIP

Applications are invited for a junior fellowship tenable in the Institute of Irish Studies from 1 October 1984 (or exceptionally 1 January 1985 for research in any field of study relevant to Ireland.

Candidates for the fellowship, which is worth £5,355 per annum (under review) plus fees and tenable for one year with possible renewal for a second, should normally hold a good honours degree and must have research experience.

Application forms are available from the Secretary to the Academic Council, The Queen's University of Belfast BT7 1NN, and should be lodged with it by 10 August 1984. (16585) H1

The University of Lancaster
Department of Psychology

TWO-YEAR TEMPORARY LECTURESHIP

Suitably qualified applicants should have research experience in some aspect of higher cognitive processes. The appointment, for two years, will commence on 1 October 1984 (or soon after) at lecturer scale, £6,195 to £7,190 or £8,830 p.a. (under review).

Further particulars may be obtained from Dr. P. Johnson-Laird, Department of Psychology, The University, Bailrigg, Lancaster (quoting reference 84/79), with applications (5 copies), vitae and the names of two referees required by 20 July 1984. (16581) H1

Applications are invited for the following posts for which applications close on the dates shown. SALARIES (unless otherwise stated) are as follows: Professor A$51,000; Senior Lecturer A$32,677–A$38,088; Lecturer A$24,365–A$31,964. Further details and application procedure may be obtained from The Association of Commonwealth Universities, (Appts), 36 Gordon Square, London WC1H 0PF unless applications are invited direct to the University.

La Trobe University
Melbourne
School of Social Sciences

LECTURER/ SENIOR LECTURER – TENURABLE DEPARTMENT OF LEGAL STUDIES

The Department of Legal Studies wishes to make a new appointment to its lecturing staff in the field of Law and Public Policy. Applicants should be able to approach this broad area with the insights of political economy or economics.

The Department teaches an undergraduate program in socio-legal studies within the School of Social Sciences at La Trobe University and is also in the process of developing graduate courses of study. The successful applicant for the present position will be expected to teach at both undergraduate and graduate levels.
17 August 1984

LECTURER/ SENIOR LECTURER – TENURABLE DEPARTMENT OF SOCIOLOGY

Applications are invited for a Tenurable Lectureship or Senior Lectureship in social anthropology. The successful applicant will essential. Preference will be given to applicants with research expertise regarding Australia and its nearest neighbours – this would include Aboriginal studies, research on ethnic minorities, Australian studies, research on aspects of Australian ethnic relations.
17 August, 1984

James Cook University
of North Queensland

Following the amalgamation of the Townsville College of Advanced Education with the University, a School of Education was established to integrate the teaching and research activities of the Department of Education and the teacher education activities of the former College. The School currently offers courses and undertakes research and development in early childhood, primary and secondary education, at diploma, degree and higher degree levels. In 1984 it has 70 equivalent full-time academic staff and 840 equivalent full-time students.

LECTURER/SENIOR LECTURER IN EDUCATIONAL MEDIA

Applicants must have appropriate tertiary qualifications, preferably a higher degree, and experience in the field of education. Skills in media as an educator, a manager of audio visual resources and as a researcher/ developer of instructional materials. For appointment at the Senior Lecturer level, an applicant would be expected to have extensive relevant experience and demonstrated research ability. The appointee will assume responsibility for the teaching of audio visual subjects to students in primary and secondary teacher education programs and will be expected to undertake research and development activities. In addition the appointee will be required to be Director (Designate) of the Audio Visual Unit which services the University in the areas of photography, audio and video production and equipment maintenance and repair. In this latter role the appointee will currently oversee the operation of the unit which has a non-academic staff.
Commencement date: 1st October.
3 August, 1984

LECTURER IN MATHEMATICS EDUCATION

Applicants must have an appropriate higher degree with substantial qualifications in mathematics, mathematics education and computing education. Experience in mathematics curriculum development, in-service education, research, research supervision and teaching experience, particularly in primary schools, are also essential. The successful applicant will be in the area of primary mathematics curriculum studies but the appointee may also be expected to teach in other areas of the undergraduate program which includes a study of modern systems, computer studies, mathematics, science and geography. The appointee will be required to supervise higher degree research students in these areas of specialisation.
3 August 1984

Macquarie University
Sydney

Applications are invited for appointment to the following Lectureships tenable not before 1 February 1985 for a fixed term of five years.

LECTURER IN BIOLOGY in the FIELD of MOLECULAR BIOLOGY

School of Biological Sciences

Preference will be given to applicants with experience in recombinant DNA techniques, for example vector construction involving either *E.coli* or *S. cerevisiae* plasmids, and DNA sequencing. Good prospects exist for collaborative research at the molecular level with existing research groups within the School currently working in plant physiology/biochemistry, virology (particularity of the Herpes group), developmental biology of Dictyostelium and characterization of metaspids. The CSIRO Plant Physiology Unit of the Division of Food Research is also located in the School and regularly participates in collaborative research projects.

The successful candidate will be expected to assist in the teaching of undergraduate courses (main emphasis at the upper level) and to supervise postgraduate research students. Further information about the position can be obtained from Professor D. W. Cooper, Head of the School of Biological Sciences.
3 August 1984

LECTURER IN PHYSICS

School of Mathematics and Physics (which also includes Electronics and Computing)

The duties of the appointee will include teaching in physics to honours degree level (some teaching in electronics may also be required) and conduct of research in Physics including postgraduate research supervision. The field of research interest of applicants is not restricted, but some preference may be shown for physicists with strong theoretical backgrounds who are interested in interacting with experimentalists working in the areas of optical physics, atomic and molecular physics, physics of materials (including thin films) and other areas of interest in the discipline.
3 August 1984
Equality of Employment is University Policy

The University of Western
Australia, Perth

LECTURER IN ENGLISH (FIXED TERM)

Department of English

Applications are invited for appointment for a fixed term of three years.

Literature, new literatures written in English, literary studies and its literary theory and criticism. Members of staff normally teach in the first or three of these areas.

Applications are invited from candidates with interests in any of these fields but other things being equal, preference will be given to candidates whose interests include literature, eighteenth-century literature, literary theory and criticism. Enquiries of an academic nature should be addressed to the Head of the Department, Professor John Hay.

Benefits include superannuation, fares to Perth for appointee and dependant, family and removal allowance. Conditions of appointment will be specified in any offer of appointment which may be made as a result of this advertisement.

Applications in duplicate stating full personal particulars, qualifications and experience and the names and addresses of three referees should reach the Staffing Officer, University of Western Australia, Nedlands, Western Australia 6009, by *11 August 1984.*

University of Sydney

CHAIR OF GERIATRIC MEDICINE

Applications are invited from suitably qualified medical graduates for the Chair of Geriatric Medicine. The Professor will be based initially at Concord Repatriation General Hospital.

The Professor, who should be an experienced clinician, will be expected to develop geriatric services as the Hospital is developed, to direct research into the problems of the elderly and to supervise postgraduate and undergraduate teaching.

Salary plus a clinical loading of A$9,125 per annum (under review).
31 August 1984

CHAIR OF LAW

Department of Law

Preference will be given to applicants with special interests in the field of criminal law.
17 August 1984

LECTURER/ SENIOR LECTURER IN DEPARTMENT OF PATHOLOGY

Applications are invited from graduates with appropriate medical qualifications and suitable postgraduate training in basic and clinical research in Pathology. Preference will be given to those with higher qualifications in a field related to pathology. The Department is responsible for clinical teaching in the Faculties of Medicine, Dentistry and Science.
Salary plus parochial loading A$6,088.
17 July 1984

LECTURER IN DEPARTMENT OF AERONAUTICAL ENGINEERING

Applicants may have research interest in any of the major fields in aerodynamics, engineering, but preference will be given to those with experience in the teaching of applied aerodynamics. The position will be available from early 1985.
27 July 1984

Appointment to a Lectureship is usually probationary for three years. The University reserves the right not to proceed with any appointment for financial or other reasons.

THE UNIVERSITY OF ASTON IN BIRMINGHAM

DIRECTOR OF LIBRARY AND INFORMATION SERVICES

'The Times they are A-changin'

And nowhere more rapidly than in Library and Information Services. The University wishes to appoint a Director who can meet the challenge of the information revolution, pioneer new methods, assimilate twenty-first century technology and build surely on its Library's current highly-computerised foundations.

To provide enhanced, modern services against a background of escalating book and periodical costs, and tight university budgets, will require management and professional skills of a high order.

The Professional-level post consequently demands a track record in advanced library and information management, gained in higher education industry, commerce or government, complemented by familiarity with computer hardware and software, and operational research and modelling techniques for financial and operations management. A continuing personal research interest in library and information science is expected.

If you have these qualifications and could be a dynamic, persuasive advocate of library and information services in the university, please contact, for further information, The Staff Officer (Quoting ref: 616/156), University of Aston in Birmingham, Gosta Green, Birmingham B4 7ET. (Tel: 021-359 3611, Ext. 4564). Closing date for the receipt of applications is 27th July, 1984. (16582)

UNIVERSITY OF STRATHCLYDE
Department of Pure and Applied Chemistry

TEMPORARY LECTURESHIP

Applications are invited for a temporary lectureship, tenable for three years, in Physical Chemistry. The successful candidate will be expected to interact with existing research groups in Solid State Chemistry and the Physical Chemistry of Polymeric Materials. Both groups have a strong technological interest in the application of polymeric and crystalline organic materials in the electronics industry. Preference will be given chemistry of or the appearance in either polymer synthesis materials.

Salary on scale for Lecturers (£7,190 – £14,126 p.a.), less benefit.
Application forms and further particulars (quote ref: 41/84) are available from Staff Office, McCance Building, University of Strathclyde, 16 Richmond Street, Glasgow G1 1XQ.

Closing date for applications: 27 July 1984 (16583)

THE CHINESE UNIVERSITY OF HONG KONG

Invites applications for the post of Lecturer in General Business Management and Personnel Management tenable from January 1, 1985.

The appointee will be required to teach courses in the area of Operations/Production Management and Quantitative Methods.

Applicants should have a higher degree (Preferably a Ph.D. or D.B.A.) in a relevant field with appropriate university teaching and/or research experience.

Annual Salary:
HK$148,080 – 168,000 by 2 increments BAR HK$177,960 – 247,800 by 7 increments. Exchange rate approximately: US$1 = HK$7.8, £1 = HK$12. Starting salary will depend on qualifications and experience.

Conditions of Service
Benefits include sick leave, vacation leave, long leave with pension/superannuation (University 15%, appointee 5%), medical benefits, education allowance for children and housing allowance for those whose annual salary is HK$158,040 or above, and for appointees on contract terms, passage benefits for themselves and their dependents as well.

Application Procedure
Applications should be made out in duplicate, giving full particulars, experience and the names and addresses of 3 persons to whom reference may be made, and sent together with copies of certificates/diplomas, testimonials and recent publications to the Personnel Section, The Chinese University of Hong Kong, Shatin, N.T. Hong Kong not later than August 15, 1984. Please quote reference number 33/809/2/84 and mark 'Recruitment' on cover. (16568)

University of Bristol

CHAIR IN PHYSIOLOGY

The University invites applications for the establishment to a Chair in Physiology.

A clinical qualification is desirable but not essential. Candidates are invited to submit applications, including the names of three referees, so as to reach the undersigned not later than 22nd August, 1984 to the Registrar and Secretary of the University, Senate House, Bristol BS8 1TH, from whom further particulars may be obtained.

University of London
Institute of Advanced Legal Studies

DIRECTOR (PART-TIME)

Applications are invited for the post of Director (part-time) of the Institute after the present Director (Professor Leon Mitchell) retires on 30th September, 1987. The Committee of Management (Chairman: Professor Diamond) wishes to appoint a full-time Director, preferably a person with experience of management, including teaching experience, preferably in commercial law, who will be responsible for the development of the Institute's taught courses, especially the Diploma in Legal Practice, and research programmes. The Director will be in the rank of primary responsibility for the administration of the Institute, including the appointment of staff, the control of finance and the maintenance of the premises. The Director will be expected to teach in the Institute's taught courses and undertake research and development in early childhood, primary and secondary education, at diploma, degree and higher degree levels. In 1984 it has 70 equivalent full-time academic staff and 840 equivalent full-time students.

Applications should be received by the Secretary, Institute of Advanced Legal Studies, 25 Russell Square, London WC1B 5DN, by 31st July 1984. (16572) H1

University of Warwick

TEMPORARY HALF-TIME LECTURESHIP

The Department of English and Comparative Literary Studies has a vacancy for a half-time lectureship to run from 1 October 1984 until 30 September 1985. It is expected that the successful candidate for the post will be in American Literature and in the nineteenth or twentieth century. The nineteenth-twentieth century specialities will be considered. Applicants with specialisms will be considered. Applicants with specialisms outside these areas will be considered if their specialisms will be considered if their specialisms will be considered if their specialisms

Polytechnics continued

Brighton Polytechnic

FACULTY OF MANAGEMENT AND INFORMATICS

HEAD OF DEPARTMENT OF SERVICE SECTOR MANAGEMENT

Grade V £15,390 – £17,091 (under review)

The Department, located at Eastbourne, offers an HND in Hotel,Catering and Institutional Management and an HND in Public Administration, in addition to part-time and short courses. A BA in Hotel and Catering Management is at an advanced stage of development.

The new Head will develop the present range of courses, and participate in developing courses in Leisure, Recreation and Tourism Management. He/she should have substantial industrial and academic experience, appropriate qualifications and a concern for research and consultancy.

For further details and application forms please contact the Personnel Officer, Brighton Polytechnic, Moulsecoomb, Brighton BN2 4AT. Telephone Brighton 693655, Ext. 2537. Closing date 27 July 1984. (16570)

LIVERPOOL POLYTECHNIC

DEPARTMENT OF MARITIME STUDIES

PRINCIPAL LECTURER

MARITIME ECONOMICS AND SHIPPING OPERATIONS

£12,519–£15,744

Qualifications and Experience:
Postgraduate or Honours first degree qualifications in Economics/Business Administration with specialisation/experience in Transport/Shipping.

Application forms and further details are available from the Personnel Office, Liverpool Polytechnic, 70 Mount Pleasant, Liverpool L3 5UX. Tel: 051-207 3581, Ext. 2518.

Closing date is 14 days from the appearance of this advertisement.

Liverpool Polytechnic is an Equal Opportunity Employer and welcomes applications irrespective of race, sex, marital status or disability. (16586)

The Hatfield Polytechnic
School of Humanities

LECTURER II/SENIOR LECTURER IN HISTORICAL STUDIES

A Modern Historian with special interest in the History of Science and Technology is invited to teach a wide range of courses, with responsibility to offer political and social history would be an advantage.

Salary: Lecturer II £7,473–£11,868 (under review) SL £13,077. Salaries are under review.

Application forms and further details available from the Staffing Officer, The Hatfield Polytechnic, PO Box 109, Hatfield, Herts, AL10 9AB, or telephone Hatfield 68100 ext. extension 3.08.

Please quote reference: 800.

Closing date: 30th July, 1984. (10838) H3

Trent Polytechnic
Department of Industrial and Production Engineering

LECTURER GRADE II/SENIOR LECTURER IN MANUFACTURING ORGANISATION

(£7,815–£13,443)
Pay Award pending

Applications are invited from candidates with a good honours degree in Production or Industrial Engineering and at least four years relevant experience. The post, available from 1st September, 1984, will involve teaching, supervision and consultancy in the organisation and management of production systems, including production scheduling and control, quality assurance and manufacturing policy.

A higher degree and/or an interest in numerous research is highly desirable.

Further details and form of application are available from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham, NG1 4BU. Closing date: 13th July, 1984. (10802) H3

Polytechnic of the South Bank
London Road, London SE1
Department of Social Sciences

LECTURER II/SENIOR LECTURER IN SOCIOLOGY

Applications are invited for the above post to take effect from September 1st 1984.

Candidates must be able to offer teaching expertise in Research Methods/Statistics with computing and additionally should be able to offer at least one of the following areas: culture, language and communications; deviance; sociology of education; contemporary British society.

Candidates should have relevant qualifications in sociology and/or related disciplines with teaching experience in teaching and research.

Salary is in the following ranges: Senior Lecturer £11,670 (£9–£14,436 (under review) II: £8,808 (£9–£11,868 (under review) inclusive of London Allowance.

Further details and application forms available from the Staffing Officer, tel: 01-928 8989 ext. 2333.

Closing date/full details of application forms 11th July 1984.

The Polytechnic is an Equal Opportunities Employer. (10826) H3

Bristol Polytechnic
Department of Humanities

PART-TIME LECTURESSHIPS IN HISTORY

Applications are invited from well qualified persons to teach to honours degree level in (a) European History since 1789 and (b) British Economic History since 1750 for the 1984/85 session.

Closing date for all applications 30th July 1984.

Written applications to Secretary of Humanities, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol BS16 1QY. (10844) H5

Oxford Polytechnic
Department of Engineering

SENIOR LECTURER/ PRINCIPAL LECTURER IN ELECTRONIC DESIGN REF: ENG/5
LECTURER II/ SENIOR LECTURER IN ELECTRONICS REF: ENG/2TR

Electronics engineers from industrial or academic establishments are invited to apply for the above two posts. Candidates should have a good Honours degree in Electronics Engineering or a related discipline together with a Higher Degree or relevant industrial experience.

Applicants for the Electronic Design post should possess experience of electronic design including the use of CAD techniques. The appointee will play a leading role in the development of Electronic Design to degree level.

Applicants for the second post should have experience of microelectronics both hardware and software and computing.

The successful candidates will be expected and encouraged to establish a programme of active research and/or consultancy.

Salary Scale: LII £7,215 – £11,868 (under review) SL £10,683 & £13,443 (under review) PL £12,519 – £15,744 (under review).

LECTURER II/ SENIOR LECTURER IN DYNAMICS OF ENGINEERING SYSTEMS REF: ENG/30

Applications are invited for the above post: candidates should have a good Honours degree in Mechanical Engineering or a closely related discipline, together with a Higher Degree or relevant industrial experience.

Applicants must be capable of teaching Mechanics, or a related subject area, to final year honours degree level and the successful candidate will be expected and encouraged to establish a programme of active research and/or consultancy.

Salary Scales: LII £7,215 – £11,868 (under review) SL £10,683 – £13,443 (under review) PL £12,519 – £15,744 (under review).

Oxford, OX3 0BP. Telephone Oxford 64777 ext 3241, giving application forms to completed application forms is 16.7.84. (10847) H3

Portsmouth Polytechnic
Department of Economics and Economic History

RESEARCH ASSISTANT/ ASSOCIATE (2 POSTS)

Post 1: Marine Resources Research Unit.

To work on the Economics of Fisheries with a Degree in Economics or Fisheries studies required, and preferably some knowledge of fishing industries.

Post 2: Local Economy.

To assist in continued development of a local activity/employment forecasting model for South Hampshire. Honours Degree in Economics with quantitative background required.

Each appointment is for a two-year fixed term in the first instance. Preference will be given to candidates with post-graduate qualifications, and one appointment may be made at Associate level. There are limited teaching duties.

Salary Scales: Research Assistant £5,415–£6,123 per annum. Research Associate £8,097–£8,937 per annum – both under review.

Application forms and further particulars from Personnel Office, Mayfield, Cambridge Road, Portsmouth. Tel: 0705 – 825464 (24 hrs). Please quote reference 627. Closing date 20 July 1984. (10814) H11

Coventry (Lanchester) Polytechnic
Faculty of Engineering
Department of Systems & Computing

HEAD OF DEPARTMENT BURNHAM GRADE V £15,390 – £17,091 (PAY AWARD PENDING)

Interested applicants are invited to contact the Dean of Faculty, Dr. W.H. Palmer on Coventry (0203) 24166 (Ext. 7686) for an informal discussion.

Application forms and further particulars are available from Mrs. Wing, Faculty Secretary, to the Director, Priory Street, to Wednesday 25th July, 1984.

Equal Opportunity Employer. H3

Colleges and Institutes of Higher Education

County of Avon
Bath College of Higher Education
(Incorporating Bath Academy of Art)

Lecturer/ Senior Lecturer in Resource Management

Applications are invited from graduates in Menagement or Business Studies to teach courses in Economics, marketing and consumer studies to Home Economists studying for B.Ed. and B.Sc. Honours Degrees. The appointment is from 1st January 1985, or earlier if possible.

Salaries (under review):
Lecturer II £7,215 to £11,868
Senior Lecturer £10,683 to £13,443

Further details may be obtained from the Director, Bath College of Higher Education, Newton Park, Newton St. Loe, Bath, Avon, BA2 9BH. Telephone (02217) 3701 to whom applications (no forms) should be submitted by 16th July 1984. (16822)

SOUTH GLAMORGAN COUNTY COUNCIL
SOUTH GLAMORGAN INSTITUTE OF HIGHER EDUCATION • CARDIFF
FACULTY OF TECHNOLOGY

Applications are invited for the post of

HEAD OF SCHOOL OF MARITIME STUDIES - GRADE 4

Applications are invited from professionally qualified and experienced persons for the above appointment to commence duties on 1 September 1984 or as soon as possible thereafter.

SALARY Scale:- £14,148 – £16,848
(Pay award pending)

Further particulars and application forms may be obtained from The Personnel Officer, South Glamorgan Institute of Higher Education Cynoced Centre, Cynoced Road, Cardiff CF2 5XD. Completed application forms should be returned within fourteen days of the publication of this advertisement. (16671)

Research and Studentships continued

Brighton Polytechnic

FACULTY OF EDUCATION STUDIES

RESEARCH ASSISTANT IN PEACE EDUCATION

£4,947–£5,649

Required for a project in Curriculum Development for Education in Peace, directed by Dr Roger Homan. Candidates should possess a good honours degree and be acquainted with educational practice. The appointment will be for two years from 1 September 1984, with the possibility of extension to a third.

Application forms and further details are available from the Personnel Officer, Brighton Polytechnic, Mithras House, Mouisecoomb, Brighton BN2 4AT. Tel: Brighton 693655 ext. 2536.

Closing date 20 July 1984. (16555)

HERIOT-WATT UNIVERSITY
Department of Mechanical Engineering

SCIENCE AND ENGINEERING RESEARCH COUNCIL STUDENTSHIP

An SERC studentship is available for 3 years commencing 1st October, 1984 for research in one of the following areas: dynamics of rotors, boiling and condensing heat transfer, particle separation from gas flows, programmable automation and dynamics of marine risers. Interested parties who should possess 1st Class of Upper 2nd Class Honours degrees in Mechanical Engineering or a related discipline, should contact the undersigned before the middle of July.

Professor J. Roke
Department of Mechanical Engineering,
Heriot-Watt University,
Riccarton,
Edinburgh EH14 4AS. (16572)

The University of Leeds
School of Education
Centre for Studies in Science and Mathematics Education

RESEARCH FELLOW (PUBLIC SCIENTIFIC LITERACY)

Applications are invited for a two-year, fixed-term post of Research Fellow to initiate work in the field of public scientific literacy, including the investigation of the scientific attainments of selected groups of adults, the exploration of their perceived needs for scientific knowledge and skills, and the relation of issues to existing formal and informal provisions.

Applicants should have either a Ph.D. or substantial appropriate experience and have a strong academic background in science, at least to first degree level, and post-graduate qualifications in a relevant field including aspects of research techniques (e.g. Education, Science Education, Psychology, Sociology; applicants with relevant research experience should not be deterred from applying).

Salary on the IA Range of the salary scale for Research and Analogous Staff (£7,190 – £11,615) according to age, qualifications and experience.

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number 5181/C. Closing date: 10th July, 1984. (10824) H11

The University of Leeds
Department of Inorganic and Structural Chemistry

STUDENTSHIPS

SERC CASE awards are available in the Nuvo Antitussis Solutions Group of the above department: Redox Dilemmonns in ammunium salt/liquid ammonia mixtures – a search for low temperature battery systems (Chloride Technical). 2. Use of liquid ammonia as a solvent in the separation of precious metals.

Applicants must hold a I or II (I Class Honours Degree in Chemistry or a related science) and will be expected to submit for the Ph.D. degree. Further details are available from Dr J. S. Gill, Department of Inorganic and Structural Chemistry, The University, Leeds, LS2 9JT. Tel: 0532 431751 ext. 6059, 6057 or 6060). (10832)

University of Edinburgh
Department of Computer Science

RESEARCH FELLOW IN THE THEORY OF COMPUTATION

There is vacancy for an SERC funded one year research post in the field of Computer Science. The post is part of a project to apply formal specification techniques to the definition and verification of communication protocols and VLSI systems. The candidate should have a Ph.D. in computer science/mathematics or equivalent qualifications in computer science/mathematics. Familiarity with formal specification techniques is preferred and candidates with some knowledge of the application areas will be preferred. Further particulars may be obtained from Matthew Hennessy, Dept. of Computer Science, University of Edinburgh, Mayfield Road, Edinburgh EH9 3JZ, to whom applications should be made.

PLEASE QUOTE REFERENCE NO. 5181. H11

University of Edinburgh
Cancer Epidemiology Unit

RESEARCH ASSOCIATE

Graduate (probably mathematics or biological science) required to help in setting up studies into the causes of human cancer. Will involve some travelling and involve some statistical work, use of managerial skills and computing an advantage.

Salary 13 grade £6,510–£8,539, depending on age and experience.

Applications in writing (2 copies), including C.V. and names and addresses of two referees, should be lodged with the Secretary to the University of Edinburgh, 3rd Floor, Old College, South Bridge, Edinburgh EH8 9YL not later than 13 July, 1984.

Please quote Reference No. 5182. H11 (10835)

University of Sussex
Institute of Development Studies

RESEARCH OFFICER (ECONOMIST)

Applications are invited from economists with relevant doctoral or other research experience for appointment to a project on African Food Strategies under the direction of Professor Michael Lipton, which Kenya and Rwanda can help to implement success-ful food strategies, and how EEC policies, especially aid (co-operation), might give support. Emphasis will be on (a) nutrition, (b) improved food output and consumption data.

The appointment will be for 18 months from September/October 1984 at a salary in the range £6,310 – £9,425 p.a. (scales currently under review) according to qualifications and experience. Reasonable fluency in French, willingness to travel, and ability to work independently are required.

Application Forms available from the Establishment Officer, Institute of Development Studies, University of Sussex, Brighton BN1 9RE. Tel. (0273) 606261, ext. 8197. Closing date: Friday 27 July 1984. (10811) H11

University College of Swansea

RESEARCH STUDENTSHIPS

Applications are invited for two research studentships in the Department of Civil Engineering in the Department of Mechanical Engineering, leading to a Ph.D. degree. Applicants should have or expect to receive an upper second class honours degree or equivalent and will be required to undertake research involving the development of computer based finite element models of flow around and heat transfer from vehicles passing through passages through long tunnels.

SERC CASE Studentship to undertake further aspects of the research outlined above.

University College Studentship to undertake further aspects of the overall above research.

Further details and application forms may be obtained from Dr J. O. Medwell, Department of Mechanical Engineering, University College of Swansea, Singleton Park, Swansea SA2 8PP. (10824) H11

University of Essex
Department of Computer Science

SENIOR RESEARCH OFFICER

Applications are invited for the post of Senior Research Officer in the Department of Computer Science for a period of 3 years with effect from 1st October 1984. Appointment will be on one of the first four points of Range IA commencing between £7,190 and £8,530 per annum (under review) according to age and experience.

The successful candidate will contribute to a project funded under the Alvey initiative and concerned with the development and applications of a behavioural specification language for communicating systems. Good mathematical and programming abilities are essential for this post; knowledge of the principles of program specification, LCF and/or CCS would be advantageous.

Applications (three copies), including a curriculum vitae and the names and addresses of two referees, should reach the Registrar, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, from whom further particulars may be obtained quoting reference number 84/RA. Department of Computer Science (Tel. 0206 862286 ext 2395). (10810) H11

The University of Leeds
Department of Physics

POST-DOCTORAL RESEARCH FELLOW

Applications are invited for the above post to work on the structure and properties of highly oriented polymers involving the use of synchrotron radiation X-ray diffraction and spectroscopic techniques. The appointment is available from 1st October, 1984 and will be made for a fixed period of up to two years. There may be the possibility of a further fixed-term contract thereafter. Applicants should have a good honours degree in Physics, Chemistry or Materials Science, and preferably a PhD or relevant industrial or other expertise in Polymer Science or Materials Science.

Salary on the IA Range for Research and Analogous Staff (£7190 – £11615) under review) according to age, qualifications and experience.

Informal enquiries may be made to Professor I.M. Ward, telephone (05321) 43113/ Extension 7118.

Application forms and further particulars may be obtained from the Registrar, The University of Leeds, Leeds LS2 9JT, quoting reference number 5303/C to whom applications should be addressed. Closing date for applications 31 July 1984. H11

University of Strathclyde
Industrial Control Unit

RESEARCH FELLOWSHIPS

Applications are invited for two postdoctoral Research Fellowships to work on a three year project supported by a new SERC award for the development of algorithms and software for optical control system design. The work will involve defining and assessing existing techniques and pursuing new developments in the methodology of LQG controller design. Advantageous but not essential is an interest in and existing industrial prescription an important function of the post.

Salary on Range IA (£7,190–£11,615 pa) or the national salary scale for research staff. Uss benefit.

Applications (quote ref: R32/84) with full curriculum vitae and the names and addresses of three referees should be sent to Dr M. A. Johnson, University of Strathclyde, Department of Electrical and Electronic Engineering, Royal College Building, 204 George Street, Glasgow G1 1XW, from whom further particulars may be obtained. Closing date for applications 31 July 1984. H12

The University of Lancaster
Registrar's Office

ADMINISTRATIVE ASSISTANT

Applications are invited from graduates who have an opportunity for a person seeking a first post in academic administration in which will be necessary to develop a wide range of relevant skills including the use of computerised systems.

The appointment will be made at the lower end of the national salary scale £6,310–£9,425 (under review). Further particulars and application forms may be obtained from The Establishment Officer (quoting ref: 6/84), The Landmark Hill, London House, Ballrigg, Lancaster LA1 4YW, to whom applications (five copies) naming two referees, should be sent not later than 24th July 1984. (10818) H12

University of London
Institute of Psychiatry

SECRETARY

Applications are invited for the post of Secretary to the Director of the Institute. Experience of secretarial work in a medical, academic, administration or higher education, institution or higher education, would be an advantage.

The salary will be on Grade 4 of the University Academic Related Scales for administrative, clerical and executive staff, £7,190 pa and upwards plus £1,185 p.a. London allowance according to qualifications and experience.

Applications should be made to the Dean, Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF from whom further particulars may be obtained. Closing date for applications 31 July 1984. H12

Property for Sale

BORDOGNE SUCCESSFUL COTTAGES. House for sale, unusual and sympathetically designed. Old restored farm house, 5 beds 2 lounges plus modern facilities. £50,000 FF. Tel: 010 33 (45) 64 98 16. (53560) H30

Accommodation To Let

PROFESSOR'S BORDOGNE COTTAGE July £63 pw incl. other Tuscany September. Winter Chateau/apt 2 months + my rents. (mod cons) Heymans, Bruncheit, Caprese, Arezzo 53033, Italy. (10841) H55

Administration

SENIOR STAFF DEVELOPMENT OFFICER

Salary: Burnham FE Principal Lecturer (to bar) £12,519–£13,938
APT & C Conditions of Service will apply.

This post, within the Further/Higher Education Branch, is to undertake a range of initiatives in academic staff training and development.

Applicants should be graduates with successful teaching experience in further, higher or adult education.

With the present range and pace of developments in the post-16 field this appointment offers an exciting and challenging opportunity to build on development already underway.

Further details and application form, returnable by 20th July, from Director of Education, (for the attention of HE/FE Section), PO Box 57, Avon House North, St James Barton, Bristol BS99 7ES. Please enclose a.s.e.

Avon is an equal opportunities employer.

Education Department

Avon COUNTY COUNCIL

Research and Studentships

TEESSIDE POLYTECHNIC
Department of Electrical, Instrumentation and Control Engineering

LEA RESEARCH ASSISTANT (VORTEX FLOWMETERING)

Salary: £6,849–£6,123 per annum
which includes payment for up to 6 hours teaching assignment per week.

The successful candidate will be involved in the development of novel vortex flowmeter body shapes. A comparison will be made of thermal, optical and ultrasonic vortex detection techniques in order to establish the optimum technique for a given fluid type. The investigation will also include the assessment and development of digital signal processing techniques. A 300 mm diameter wind tunnel with a standard ultrasonic vortex correlation flowmeter will be used for the experimental work.

Applications are invited from graduates possessing at least a second class honours degree in an appropriate engineering or applied science discipline.

The appointee will be required to register with CNAA for a MPhil/PhD and will be required to contribute to the teaching work of the Department for up to six hours per week. The appointment will be made from 1 October 1984 and is for a period of three years only. D J Bentley would be willing to have informal internal discussions with intending applicants should this be desired. Tel: (0642) 218121 ext. 4174.

Application forms are available from the Personnel Section, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 3BA. Tel: (0642) 218121 ext. 4114. Closing date: 1 August, 1984. (16548)

University of Exeter
Department of Computer Science
Research Studentship

ARTIFICIAL INTELLIGENCE AND EDUCATION

Applications are invited from suitably qualified persons wishing to carry out research towards a PhD degree within an existing group working on applications and techniques of Artificial Intelligence in education.

Preference will be given to persons wishing to work in the area of intelligent computer assisted learning or standard. Applicants with a first or upper second class honours degree in Computer Science, Psychology or Education, as well as French, will be considered. Some familiarity with relevant areas of Artificial Intelligence will be expected of applicants whose main education qualifications are in other subjects. A successful applicant will be supported by an SERC award studentship.

For further details please contact: The Director, Department of Computer Science, University of Exeter, Exeter EX4 4QL.

Applications should be sent in writing (2 copies), including a C.V., to The Assistant Registrar, University of Exeter, Northcote House, Exeter EX4 4QJ by 24 July 1984. H11

Readvertisement
Preston Polytechnic
School of Electrical and Electronic Engineering

RESEARCH ASSISTANT

Applications are invited from graduates with a good honours degree in an appropriate discipline to join an active group working on MICROPROCESSOR SIGNAL PROCESSING SYSTEMS used in the analysis and processing of satellite image information. The work is supported by the Remote Sensing Division at the Royal Aircraft Establishment, Farnborough.

The appointed Research Assistant will be expected to register for an M.Phil or Ph.D degree.

The post will be a 3-year fixed term appointment from 1st June 1984 (may be 1st September 1984). Salary scale: £6,123 – £9,561.

Informal enquiries may be made to Dr J. Green (Tel. 0772) 22141 (Ext. 2607).

Previous applicants will be reconsidered.

Application forms and further particulars may be obtained from the Personnel Office, Preston Polytechnic, Preston, PR1 2TQ, quoting reference AA/115.

Closing date: 20th July 1984.

The Polytechnic will be recognised Lancashire Polytechnic from September 1984. H11

Kent County Council Education Committee
Nonington College

LECTURER II IN DRAMA

to commence September, 1984.

Applications are invited for a two year appointment in the Drama Department. The person appointed will teach in acting, directing and some theory of drama to students following the B.A. (Hons) degree course.

Further details may be obtained from the Principal, Nonington College, The Ingrave, Dover, Kent CT15 4HH. Applications with curriculum vitae and the names and addresses of two referees, to the Principal not later than 18th July, 1984. (16838) H

Courses

STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES

September 17–19, 1984.

A three day course to make use of the SPSS data analysis computer package.

Further details from Peggy Dunn, Department of Social Policy, University of Bath, Claverton Down, Bath BA2 7AY. Tel: 0225 826826 ext. 7181 or 7183. (10831)

Personal

DORSET INSTITUTE OF HIGHER EDUCATION

Have a vacancy for

HEAD OF DEPARTMENT OF BUSINESS MANAGEMENT (Grade VI)

Business Management is one of the Institute's largest departments. It has a well balanced spread of courses ranging over postgraduate, degree and diploma work with both full-time and part-time modes of study. The successful candidate will be required to further develop courses and continue the expansion of staff consultancy and research work with particular reference to the needs of the local community and the growth of new technological applications in commerce throughout the region.

Salary scales: £16,632–£18,327

Application forms and further particulars are available on receipt of s.a.e. from:

The Director (Ref: THES 6)
Dorset Institute of Higher Education
Wallisdown Road, Poole, Dorset BH12 5BB
Tel: 0202 52411, Ext. 240

The closing date for all applications is Friday 20th July, 1984. (16834)

Overseas

UNIVERSITY OF BENIN, BENIN CITY, NIGERIA

Staff vacancies exist in the underlisted Departments in the University of Benin at the levels and areas of specialization as stated below:

1. FACULTY OF SCIENCE

I. Department of Zoology
(a) Associate Professor – Physiology
(b) Senior Lecturer – Vertebrate Zoology (except fishes)
(c) Lecturer I/II – Genetics

II. Department of Biochemistry
(a) Professor – Molecular Biology, Immunology or Biophysical Chemistry.
(b) Lecturer I/II – Human Nutrition, Molecular Biology or Biophysical Chemistry.
(c) Assistant Lecturer – Bio-physical Chemistry Graduate Assistant

III. Department of Mathematics
(a) Lecturer I/II/Assistant Lecturer/Graduate Assistant/ Research Assistant – Statistics, Numerical Methods, OPTIMIZATION, Applied Mathematics (Elasticity, Boundary Layers) or Operations Research.

IV. Department of Geology
(a) Professor/Associate Professor – All areas.

V. Department of Microbiology
(a) Assistant Lecturer – Microbial Genetics or Environmental Microbiology.

2. FACULTY OF SOCIAL SCIENCES

I. Department of Political Science & Public Administration
(a) PROFESSORS/SENIOR LECTURERS – Candidates must hold PhD and specialize in the sub-field of Public Administration or sub-field of comparative politics with interest in Nigerian Politics and/or Political Economy.

II. Department of Accounting
(a) Professor/Associate Professor – Management Accounting and Taxation.
(b) Senior Lecturer – Auditing

3. FACULTY OF CREATIVE ARTS

I. Department of Fine Arts
(a) Professor – Painting
(b) Associate Professor – Sculpture
(c) Lecturer I/II – Art History, Sculpture and Painting.
(d) Assistant Lecturer - Art History and Sculpture.

4. FACULTY OF ARTS

Department of Foreign Languages
(a) Professor/Associate Professor/Senior Lecturer/Lecturer I/II – Philosophical Problems and Analysis.
(c) Lecturer I/II – Archaeology and Methodology of Oral Traditions, The Far East in the 19th and 20th Centuries, Philosophy (Ancient Greek and Modern) and Religious Studies (African Traditional Religion; Christianity and Islam).
(d) Assistant Lecturer – African Biographies, A History of African Civilization.

III. Department of Linguistics and African Languages
(a) Professor/Associate Professor/Senior Lecturer/Lecturer I/II – Theoretical Linguistics & African Languages and Historical Linguistics and Semantics.

5. INSTITUTE OF COMPUTER SCIENCE

Professor/Associate Professor/Senior Lecturer/ Lecturer I/II/Assistant Lecturer. In all areas of computing particularly: Computer Applications, Theoretical Computations, Operations Research, Graph Theory, Formal Languages, Software development and implementation, Data Base Management, Hardware and Micro Computers Development, Computer Based Simulation, Numerical Software Development.

6. CenSCER

(a) Research Professor – Environmental Research Division, Environmental Sanitation and Diseases, Rural and Urban Housing, Social Facilities.
(b) Research Fellow I/II
(i) Cultural Division: African Music, Dance, Ethnography, History and Other Facets of Culture.
(ii) Environment Division: Environmental Sanitation and Diseases, Rural and Urban Housing, Social Facilities.

7. FACULTY OF LAW

(a) Professor/Senior Lecturer/Lecturer I/II/Assistant Lecturer – Commercial Law, Jurisprudence and International Law, Private and Property Law and Public Law.

8. FACULTY OF ENGINEERING

I. Department of Civil Engineering
(a) Senior Lecturer – Environmental, Structural, Water Resources, Geotechnical and Highway Engineering.
(b) Lecturer I/II – Structural Engineering.

II. Department of Building Engineering
(a) Senior Lecturer/Lecturer I/II – Building Engineering

III. Department of Electrical & Electronic Engineering
(a) Professor – Communications/Control
(b) Senior Lecturer/Assistant Lecturer - Control.

iv. Department of Chemical Engineering
(a) Professor – Process Design or Process Dynamics, Optimization and Control or Mathematical Methods in Chemical Engineering.
(b) Senior Lecturer – Mathematical Methods in Chemical Engineering, Process Design, Chemical Reaction Engineering, Process Dynamics, Optimization and Computer Application in Chemical Engineering.
(c) Lecturer I/II – Any branch in Chemical Engineering.

v. Department of Petroleum Engineering
(a) Professor/Associate Professor – Drilling Technology or Numerical Simulation or Oil and Gas Production or Natural Gas Engineering or Reservoir Engineering.
(b) Senior Lecturer – Oil and Gas Production, Numerical Simulation, Enhanced Recovery Processes and Natural Gas Engineering.
(c) Lecturer I/II – Any branch of Petroleum Engineering.

9. FACULTY OF EDUCATION

I. Department of Adult Education & Extra-Mural Studies
Professor/Associate Professor/Senior Lecturer/ Lecturer I/II/Assistant/Graduate Assistant – Adult Education, Community Development, Social Work and Sociology/Anthropology.

II. Department of Physical & Health Education
Associate Professor/Senior Lecturer - Physiology of Exercise.

10. INSTITUTE OF PUBLIC ADMINISTRATION AND EXTENSION SERVICES

(a) Professor/Associate Professor/Senior Lecturer – Public Administration, Local Government and Health Administration.

11. FACULTY OF PHARMACY

I. Department of Pharmaceutics and Pharmaceutical Technology
Associate Professor/Senior Lecturer/Lecturer I/II – Physical Pharmaceutics

II. Department of Pharmacognosy
(a) Professor – Pharmacognosy/Phytochemistry
(b) Graduate Assistant – Pharmacognosy.

III. Department of Pharmaceutical Microbiology
(a) Professor – Pharmaceutical Microbiology with emphasis on Biosynthesis of antibiotics and fermentation Technology.
other areas of Pharmaceutical Microbiology.

v. Department of Pharmaceutical Chemistry
Professor/Associate Professor – Pharmaceutical Chemistry.

Salaries
US$ 15 – N14,280 x 720 – N15,720
US$ 14 – N12,732 x 360 – N13,372
US$ 13 – N11,364 x 576 – N14,820
US$ 12 – N10,092 x 420 – N11,352
US$ 11 – N9,000 x 360 – N10,080
US$ 09 – N7,550 x 240 – N8,040
US$ 06 – N6,336 x 192 – N7,488
Note: 1 Naira = 90 approximately

Conditions of service
Appointment on permanent pensionable terms for Nigerian candidates or on renewable two-year contract terms for Non-Nigerian candidates, when 25% of basic salary is payable in lieu of pension. Air passages at beginning and end of contract for self, wife and up to 5 children. Annual leave, leave allowance, housing at subsidised rental, car loan and basic allowance, free medical and dental treatment.

Method of Application
Typewritten application (six copies) should include curriculum vitae stating full name, nationality, place and date of birth, home address, present postal address, marital status, number and age of children, education including dates and institutions attended, academic and professional qualifications with dates, details of posts held with dates, publications with names of journals, etc, extra curricular activities, names and addresses of three professional referees to be sent by 20th July, 1984, to

The Director
Nigerian Universities
180 Tottenham Court Road
London W1P 9LE

Nigerian Universities Office
150 Kent Street
Suite 702, 7th Floor,
Ottawa, Ontario,
Canada K1R 5A3

Nigerian Universities Office
2010 Massachusetts Avenue N W
Fourth Floor
Washington D C 20036

Nigerian Universities Office
22 Wadi El-Nil Street
Mohandessin
Cairo
A R E

from whom further particulars may be obtained.

Candidates are requested to ask their referees to send their references to the above.

(16560)

EFL TEACHERS
ENGLISH LANGUAGE CENTRE
KING ABDUL AZIZ UNIVERSITY, JEDDAH, SAUDI ARABIA

We are recruiting teachers of English including teaching couples for September 1984.
Contracts will be for one year renewable.
Qualifications:
Must have M.A. TEFL or B.A. English + Diploma TEFL
Minimum 2 years experience.
Benefits:
Salary up to £18,000 p.a. tax free. Free furnished accommodation, 60 days passage paid leave. Terminal gratuity.
Applications:
Write including a detailed C.V. and telephone contact number to:
Box No: 0759

Interviews: Wherever there are 2) 2760
Interviews will be held in London between 15th and 20th of July.

(16559)

PLEASE MENTION THE T.H.E.S. when replying to advertisements

WAIT Western Australian Institute of Technology

DIRECTOR
MURESK AGRICULTURAL COLLEGE
Salary $51,006 pa

Applications are invited for the post of Director of Muresk Agricultural College. This is the senior position at the Muresk campus. The appointee will report to the Director of WAIT and will also have the title of Dean in a discipline appropriate to the area of personal expertise. An appointee with appropriate academic qualifications and record can be granted the title of Professor.

The College, which is on a 1600 ha farm, is situated 98 km east of Perth and 12 km from Northam. Courses at the College cover agriculture, agribusiness, equine stud management and horticulture. The appointee will be required to provide leadership and direction for the academic and short courses of the College, teach in an area of expertise and give further leadership and impetus to the development of the College as a centre of excellence in agribusiness and related areas. The College will seek a Principal Lecturer in Management in the near future.

Applicants should have relevant postgraduate qualifications, appropriate experience at a senior level and a good knowledge of agriculture and allied service industries. The challenges offered by the position will call for special personal qualities and ability to develop strong links with the rural community. (Ref 685)

Salary: The salary quoted is subject to a 2% increase, plus a further 3% in 1985

Tenure: The post offers permanent academic tenure it is Institute policy that persons appointed at this level will be assigned the appropriate duties for an initial period of six years with eligibility for renewal. Should the assignment not be renewed, the academic level and salary are retained

Conditions include fares for appointee and family plus assistance with removal expenses, superannuation, on campus rental residence

Applications: Details including the names and addresses of three referees should be submitted in duplicate not later than 17 August 1984 to the Migration Officer, Western Australia House, 115 Strand, London WC2R 0AJ, from whom further information may be obtained

When applying please quote Ref No and Code HE8

UNIVERSITY OF FORT HARE

Applications are invited from suitably qualified persons regardless of race, sex or religious affiliation, for appointment to the following post:

PROFESSOR/SENIOR LECTURER IN SOCIOLOGY

Minimum Requirements:
Professor – Doctorate in Sociology.
Senior Lecturer – MA in Sociology.

Additional Requirements:
Candidates must be able to lecture in at least three of the following areas of Sociology: Sociological Theory (19th and 20th century); Urban Sociology; Research Methodology; Group Dynamics.

Salary Scales: Professor – R33,109–30,285 p.a. Senior Lecturer – R16,887–24,048 p.a. In addition a pensionable allowance of 12% p.a. is paid.

Extremely attractive fringe benefits are also available under certain conditions.

Applications, together with a detailed curriculum vitae and the names and addressed of at least three referees, should be addressed to: The Staff Officer, University of Fort Hare, Private Bag X1314, Alice, Republic of Ciskei, Southern Africa.

Telegraphic address: Unifort, Alice (Ref. 24/84).

(16559)

HEDCO

Vacancies for academic and Technician Staff in the University of Jordan in the following specialties:

CIVIL ENGINEERING
Lecturer/Environment/Sanitary,
Technician – Highways
Technician – Sanitary

ELECTRICAL ENGINEERING
Lecturer Electronics

MECHANICAL ENGINEERING
Senior Experimental Officer – Instrumentation

ARCHITECTURE
Photographic Technician

HEDCO has responsibility for the EEC Contract for Technical Assistance to the Faculty of Engineering and Technology, University of Jordan.

In order to complete the first phase of this project, we are now seeking to fill the above vacancies in respect of our 1984/85 programme. These are the final appointments in this phase. Appointments are for 4 and a half or 9 months and will commence in September 1984 or January 1985. An attractive salary is offered, which will include full travel for the candidate and family.

Candidates with relevant experience should apply, with full particulars to: Dr John Kelly, Hedco, Kildress House, Pembroke Row, Dublin 2.

(16561)

UNIVERSITY OF NATAL
Centre for Applied Social Sciences
DURBAN, SOUTH AFRICA

Applications are invited from suitably qualified persons regardless of sex, religion, race, colour or national origin for appointment to the post of

SENIOR FELLOW (SENIOR LECTURER) MAURICE WEBB RACE RELATIONS UNIT

Applicants should have at least a Masters qualification or its equivalent in a branch of the social sciences. The successful applicant will have demonstrated an interest in the field of race relations by previous research and published work of a high standard. An interest in current problems race relations in South Africa will be essential

Salary in the range: R18,843–R26,930 per annum

The commencing salary notch will be dependent on the qualifications and/or experience of the successful applicant. In addition, a service bonus of 93% of one months salary is payable annually.

Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff bursary, housing loan and subsidy schemes, long leave conditions and travelling expenses on first appointment are obtainable from the Secretary, South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE or the Registrar, University of Natal, King George V Avenue, Durban, 4001, with whom applications, on the prescribed form, are to be lodged not later than 22nd August 1984 quoting the reference D53/84.

(16560)

The Ohio State University

POSTDOCTORAL FELLOWSHIP IN MECHANICS/ METALLURGY

The Department of Metallurgical Engineering has immediate opening for a postdoctoral research associate in the area of mechanical and mechanical metallurgy. The ideal candidate will possess a strong lateral numerical methods, with particular emphasis on finite element modelling (FEM), and background in the mechanical behaviour of materials. He will contribute to a five-year program to study the metallurgical constitutive equations for metals and alloys, as applicable to large-strain forming and failure analysis.

An appointment period of at least two years, renewable, is sought. Salary and benefits will be commensurate with ability and experience but will be not less than $29,000 per year. Send resume, reprints, publications, and the names of three referees to: Professor S. L. Wagoner, Department of Metallurgical Engineering, The Ohio State University, 116 West 19th Avenue, Columbus, Ohio 43210, U.S.A. 1105760

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SUDAN, OMDURMAN ISLAMIC UNIVERSITY WOMEN'S COLLEGE needs English Lecturer/ Professor or Saudi Citizen. Apply to Cultural Section, Sudan Embassy, 21 Ridgmount Gdns, London, SW7. Tel: 01-580 4481, Ext. 18.

(16564).

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Colleges of Higher Education contd

Bedford College of Higher Education

LECTURER II IN PSYCHOLOGY OF PERFORMANCE

Applications are invited for the above post from September 1984 or as soon as possible thereafter, to teach on the BSc (Hons) Sports Studies and BEd (Hons) physical education) degrees. Candidates should have a higher degree and experience in the application of psychology to sport problems. Qualification in teacher-training and in a sports aspect of outdoor pursuits would be a distinct advantage.

Please apply for application forms and further particulars from the Personnel Officer, College of Higher Education, Cauldwell Hall, Bedford MK41 9AS. Tel: 0234 48191.

Bedfordshire is an Equal Opportunities Employer

(16562)

Overseas continued

UNIVERSITY OF BOTSWANA
DEPUTY VICE CHANCELLOR

Applications or nominations are invited for the position of Deputy Vice Chancellor of the University of Botswana.

The University of Botswana was established in July 1982 and currently has an enrolment of approximately 1,400 students (including 180 pre-entry science course students) in the faculties of Education Humanities, the Social Sciences and Science.

The Deputy Vice Chancellor will assist the Vice Chancellor in directing the academic and administrative affairs of the university. The Deputy Vice Chancellor shall as Vice Chancellor when the post of the Vice Chancellor is vacant or when the Vice Chancellor is absent or unable to act.

Applicants should have a distinguished record in tertiary education, substantial experience in educational administration at high level, demonstrated qualities of leadership and management ability and a commitment to the needs of advanced education in developing countries.

It is expected that the appointee will assume duties as early as possible but not later than 3rd December, 1984.

The Council of the University of Botswana reserves the right to appoint by invitation upon such terms and conditions as may be determined by it.

Basic salary: P22,008 p.a. (fixed)

Benefits and allowances include medical aid plan, personal accident and life insurance. Assistance towards university education of dependent children and spouse, motor car allowance, education allowance, contract addition of 30% of basic salary and gratuity payable to staff on expatriate terms of service.

The university provides accommodation for which rent is payable.

Applications/nominations close on 31st July, 1984.

The University of Botswana would be pleased to hear from men and women who may wish to be candidates for the position of Deputy Vice Chancellor or who wish to suggest names of people whom the university might consider. Please write in confidence enclosing a c.v. and names of three referees to:

The Registrar
University of Botswana
Private Bag 0022
Gaborone, Botswana
Southern Africa

(14960)

THE UNIVERSITY OF NEW ENGLAND

LECTURESHIP IN HISTORY

Applications are invited from candidates qualified in any aspects of the history of 19th and 20th century continental Europe who have a postgraduate degree and teaching and research experience. The Department teaches undergraduate, honours and postgraduate courses (internal and external) in modern European History from 1760 to the present. The successful applicant's duties will include teaching in pass degree courses, supervising postgraduate and honours students and carrying out research. Ability to teach in any other of the following areas offered by the Department (Medieval, Early Modern, Australian and American) will be an advantage.

Informal enquiries to Professor S. Arasaratnam ISD 61-67 73 2068

SALARY: A$24,353–A$31,994 per annum

CLOSING DATE: 10th August, 1984

POSITION NO: 509

The appointment will be to the permanent staff but the University reserves the right to make the appointment probationary where it considers this appropriate.

Other conditions include superannuation, assistance with travel and removal expenses and with buying or building a house in Armidale.

Applications including the names and addresses of three referees and stating the position number should be sent to the Staff Officer, University of New England, Armidale, N.S.W. 2351, Australia, prior to the closing date. Applicants should forward a copy of this advertisement to their referees and ask them to send their reports direct to the Staff Officer, Mr B. G. Turner, marking their envelopes 'Private and Confidential' and quoting the position number, before the above closing date so as to expedite the appointment process.

(16583)

University of Copenhagen

Associate Professorship in Indology

An associate professorship in Indology is vacant at the Institute of Oriental Studies, University of Copenhagen. Applicants must be academically qualified in all aspects of Indian studies (linguistic, literary and cultural) within the Old and Middle Indian periods. They must also have considerable research experience in the area.

The post is permanent (subject to the general rules for termination of contract) and the salary, exclusive of obligatory pension contribution, is for the time being 192,000 – 246,000 Danish kroner according to seniority.

The Board of the Faculty of Humanities will appoint an assessment committee of three or five members of high scholarly standing. The written assessment of the committee will be circulated to all applicants. No interviews will be held.

Applications must contain all relevant information which the applicant wishes to be taken into account by the assessment committee, and should include a numbered list of the applicant's published and unpublished scholarly works (alone or in collaboration with other authors). The application must be accompanied by at least one and preferably three copies of each of the works in question.

Applications must provide evidence of the applicant's ability to teach, including information on his or her knowledge (if any) of the Danish language. Applications must be forwarded to the Faculty of Humanities, University of Copenhagen, 86 Njalsgade, DK-2300 Copenhagen S.

The closing date for applications is 15 August 1984.

(16562)

AUSTRALIA
THE UNIVERSITY OF NEW ENGLAND CENTRE FOR ADMINISTRATIVE AND HIGHER EDUCATION STUDIES

LECTURESHIPS IN HIGHER EDUCATION

Duties of the appointee will include teaching, research and supervision of both Master's and Ph.D students.

A capacity to work as a team member in teaching and research, as well as to engage in other professional development activities, would be an advantage.

Position 1 (Position No. 507)
The appointee will have particular responsibility for a course concerned with the purposes, goals, values, and structures in a variety of post-secondary educational institutions and systems. Preference will be given to persons with significant experience in administration and teaching and/or research in higher education as an area of study. Knowledge of developing trends in the application of technology to tertiary administration is desirable.

Position 2 (Position No. 507)
The appointee will have particular responsibility for a course in the theory and practice of tertiary teaching and learning. Tertiary teaching experience and an ability to relate to the professional needs of teachers from a range of postsecondary institutions are essential.

Informal enquiries to Dr. Duignan (067) 73 2675

SALARY: A$24,353 – A$31,994 per annum

CLOSING DATE: August 3rd, 1984.

Applications including the names and addresses of three referees and stating the position number should be sent to the Staff Officer, University of New England, Armidale N.S.W. 2351, Australia, prior to the closing date. Applicants should forward a copy of this advertisement to their referees and ask their reports direct to the Staff Officer, Mr B.G. Turner, marking their envelopes 'Private and Confidential' and quoting the position number before the above closing date so as to expedite the appointment process.

ARMIDALE NSW 2351
AUSTRALIA

UNIVERSITY OF BOTSWANA

PROFESSOR/SENIOR LECTURER

DEPARTMENT OF ECONOMICS

Considerable experience in teaching and in applying economic theory in third world countries: a strong and active record in research and publication in this field ability to provide dynamic and sensitive leadership to a young and growing department a commitment to establishing the role of the economics department in the research consultancy work and economic development efforts in Botswana.

The University would be prepared to consider the appointment of a suitably qualified person on secondment or leave of absence from his University or organisation.

Closing date: 24th August 1984.

Salary: Professor P18,072–P20,892. Senior Lecturer P15,804–P18,072.

Expatriate staff will be entitled to contract addition at 30 per cent of basic salary and gratuity at 25 per cent of basic salary plus contract addition on successful completion of a two-year contract further details on request.

Applications with names and addresses of three academic referees to reach:

The Assistant Registrar
(Academic) University of Botswana
Private Bag 0022
Gaborone, Botswana

(16560)

The University of Botswana
invites applications for the following posts

1. Department of Sociology
PROFESSOR/SENIOR LECTURER

Duties: Professor will be responsible for satisfactory performance of the department and to provide professional guidance and leadership.

Qualifications: Masters preferably PhD. degree together with proven competence in teaching, research and administration. Additional information on request.

2. Department of English
LECTURER

Duties: To teach English language and study skills to first year students and upgrade their writing abilities. There will be some remedial work and experience in teaching English as a second language an advantage.

Qualifications: Master's degree or better.

Salary Scale: Professor P18072–P20892; Senior Lecturer P15804–P18072; Lecturer P9684–P16368.

Expatriate staff will be entitled to contract addition at 30% of basic salary and gratuity at 25% of basic salary plus contract addition on successful completion of a two year contract.

Applications with names and addresses of three academic referees to reach the Assistant Registrar (Academic), University of Botswana, Private Bag 0022, Gaborone, Botswana, not later than August 15th, 1984.

(16540)

UNIVERSITY OF MALAWI
STAFF VACANCIES:
BUNDA COLLEGE OF AGRICULTURE

Applications are invited from suitably qualified candidates for the following posts tenable from September/October 1984 - or as soon as possible thereafter - at Bunda College of Agriculture, a constituent College of the University of Malawi.

DEPARTMENT OF AGRICULTURAL ENGINEERING

Lecturer/Senior Lecturer in Soil and Water Engineering

The successful applicant will be required to teach (1) Soil and Water Conservation, (2) Surveying, and (3) Principles of Land Husbandry in a programme leading to the award of the 3-year Diploma and the 5-year Degree in Agriculture.

Candidates should have a good Honours Degree and a postgraduate qualification in Soil and Water engineering, as well as teaching and/or practical experience, and should be able to undertake and supervise some research.

DEPARTMENT OF CROP PRODUCTION

Lecturer/Senior Lecturer in Horticulture

The successful applicant will be required to teach (1) Horticulture, and (2) first-year Biology in a programme leading to the award of the 3-year Diploma and the 5-year Degree in Agriculture, and to maintain and further develop an orchard and vegetable garden at the College.

Candidates should have a good Honours Degree and a postgraduate qualification in Horticulture, as well as teaching and/or practical experience, and should be able to undertake and supervise some research.

Lecturer/Senior Lecturer in Entomology

The successful applicant will be required to teach Entomology and Agriculture/ Entomology in a programme leading to the award of the 3-year Diploma and a 5-year Degree in Agriculture.

Candidates should have a good Honours Degree and a postgraduate qualification in Agricultural Entomology, as well as teaching and/or practical experience, and should be able to undertake and supervise some research.

Lecturer/Senior Lecturer in Pasture Agronomy

The successful applicant will be required to teach Pasture Agronomy, as well as Crop Physiology and/or Weed Science, in a programme leading to the award of the 3-year Diploma and the 5-year Degree in Agriculture.

Candidates should have a good Honours Degree and a postgraduate qualification in Pasture Agronomy, as well as teaching and/or practical experience, and should be able to undertake and supervise some research.

Competitive salaries will be offered to successful candidates. Part-furnished accommodation will be provided at 10% of basic salary, as well as the usual benefits for those employed on contracts (initially, two years), including air passages, medical expenses, educational allowances, and tax-free gratuity.

Four copies of a detailed curriculum vitae containing full particulars of qualifications and experience, plus the names and addresses of three referees, should be sent to the Registrar, University of Malawi, P.O. Box 278, Zomba by 16 July 1984

REMINDER

Copy for Classified Advertisements in the

T.H.E.S.

should arrive not later than 10 a.m. Monday preceeding publication